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THE
RAND-McNALLY
ELEMENTARY



GEOGRAPHY

RAND, McNALLY & COMPANY
CHICAGO AND NEW YORK.

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THE RAND-McNALLY

ELEMENTARY

GEOGRAPHY

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DIAGRAMS, COLORED MAPS, AND ENGRAVINGS,

PREPARED EXPRESSLY FOR THIS WORK.

CHICAGO AND NEW YORK:

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THE RAND-MCNALLY
PRIMARY SCHOOL GEOGRAPHY.

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PREFACE.

This volume is issued to meet the urgent demand for a text-book specially devised for the Topical Method of teaching Elementary Geography, and the publishers feel entire confidence in asserting that herein every requirement is fully met.

Under the Topical Method (which has come to be considered the most efficacious by many progressive teachers) a lesson, or part of a lesson, covering a given subject, is read during the exercise by members of the class, and the subject matter is then made the basis of illustration, discussion, and experiment by the teacher. In this manner children acquire, with comparative ease, a fund of technical knowledge and general information.

It will be readily observed by the intelligent teacher that this work, short as it is, covers more topics than do other geographies of the same grade. In addition to the usual treatment of surface features and their influences on mankind, such important and usually neglected subjects as air, water, temperature, material—both organic and inorganic—the sources and uses of mechanical power, the environment and habits of man, and his efforts to subdue nature, receive a due share of attention.

The relief maps deserve special attention. Those of the hemispheres are reproductions of photographs made from the best relief globes ever constructed, and are perfect of their kind; and those of the Grand Divisions are prepared on an entirely new and rational plan, whereby the comparative altitude of land surface is made at once apparent to the eye. It will be noted that the confusing light and shade effects which marred relief maps of the old style are entirely absent, and that heights and depressions are clearly shown by the gradations of tints, the elevations apparently standing out from the map in due proportion, the darkest points being the highest.

Great pains has been taken with the pictorial part of the work, and the system of making the pictures instructive has been rigidly followed. The illustrations are from photographs taken in all parts of the world, many of them specially for this book. The half-tone process, which reproduces the photograph with absolute fidelity, has been followed. This method of illustrating is much more costly than if wood cuts had been used, but the publishers have not hesitated to incur the increased expense for the sake of perfect accuracy of illustration.

In treating of countries, minor details have been omitted, as they should have no place in a text-book of elementary geography, it being better for the teacher to dwell orally on those lesser points which it is considered desirable to bring to the attention of the pupil. Also, many of the topics touched upon are not exhaustively discussed, for intelligent teachers are to-day almost unanimously of the opinion that it is better for them to elaborate and expand the text verbally, using the illustrations as topical suggestions.

It is the belief of the publishers that faithful teachers, with this book in their hands, can give their pupils a knowledge of elementary geography which will serve as a broad and stable foundation on which to build in after years.

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ELEMENTARY GEOGRAPHY.

LESSON 1.

The Earth—Surface and Shape.

Have you ever taken a long walk through shady lanes or across the dewy meadows?

If so, you hunted for wild flowers, and listened to the songs of birds, and wondered whether all the world was as green, and fresh, and lovely.

The children of a large city are not accustomed to broad, green meadows or groves of trees, but they walk through

avenues lined with handsome houses and through streets where the great stores are.

Cities, meadows, and woods are features of this earth on which we dwell, and are necessary and beautiful, each in its way.

Upon what do the houses, stores, and woods stand? Of what are the fields a part? Upon what do men walk? You may say the ground, or the land, and either answer will be right. We dwell upon the land. This land that we see is a part of the surface of the earth. The picture above is of land. Most of the surface of the earth is water; that part is called the sea. Thus

we learn from this lesson that the surface of the earth is composed of land and sea.

The inhabitants of the earth can not see a large part of its surface at one time, for although that which we see may seem large to us, it is very small compared with the whole surface. If we could see enough of the earth at once, it would appear round, as the moon does. If a man could look at it from the moon, it would appear as a great, bright ball, many times as large as the moon seems to be.

People lived for a long, long time on the earth believing it to be flat. By and by learned men noticed the shape of the sun and moon, and then began to say that the earth must be round like them. It was hard for many to believe that what these men told them was true. But after men had really sailed around it and come back to their starting point, people knew that the earth is round.

Ask to be told the story of the voyage of Columbus in 1492, and of Magellan in 1520.

Look as far as you can in any way, and you will see that the sky seems to come down to meet the surface of the earth. If you were to go to what you now see as the sky-line, you would see more of the surface



A CARAVEL. ONE OF COLUMBUS' SHIPS.



THE MOON AS SEEN THROUGH A TELESCOPE.

of the earth beyond, and the sky-line would still be far away from you. This sky-line we call the **horizon**.

LESSON 2.

The Size of the Earth.

To measure size or distance we must have something to measure by, and that thing is called the unit of measure. By what unit of measure is cloth bought and sold? Do you know a smaller unit of measure than that?

In measuring the size of the earth, or distances upon it, we need a larger unit of measure than is used for cloth; so we use one called a mile. A mile is 1,760 times as long as the unit of measure called a yard.

A man can walk a mile in twenty minutes. How long will it take a man to walk from your house to the school-house? If a train travels at the rate of thirty miles an hour, what distance will it travel

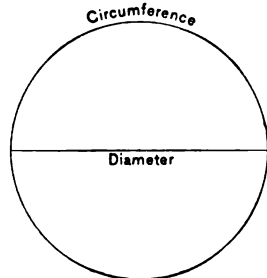
in twenty-four hours, or one day? We sometimes measure distance by time, as when we say that New York is twenty-four hours from Chicago. What do we mean by that?

Go outdoors and notice the distance to the horizon. How far away do you think it is? To you it is not very far; it is farther to your teacher, who is taller than you, because, on a great ball like our earth, the taller one is the farther the horizon is away. To a man of common height the horizon is about five miles distant in a level country, or about the distance he could walk in an hour and forty minutes.

The distance around the earth is called the circumference. It is about 5,000 times as great as the distance to the horizon is to this man. What is the earth's circumference in miles? This distance is so great that a man, walking thirty miles a day, would be more than two years in walking, or a train, at 750 miles a day, more than a month in running, it. The distance around the outside of any round thing is its circumference.

The distance through the middle of the earth is about 8,000 miles, and is called its diameter. The distance through the middle of any round thing is called its diameter. Think of a hole dug deep enough to go through the earth; it would be 8,000 miles deep.

Think how very large this great ball is upon which we live, and how very far away from us those people are who live on the other side of the earth. Great as it is, the earth is small compared with some of the other planets, yet the greatest of the planets is very small compared with the sun.



LESSON 3.

Material of the Earth.

We have said that the part of the surface of the earth upon which people live is land. Now let us consider what substance land is made of. What do we usually call it? Take up some of this earth and examine it carefully. It will crumble into powder when you rub it slightly. Spread this on a sheet of paper and examine it closely. Some particles are so fine that you can not see their shape or



ROCK EXTENDING ABOVE THE EARTH'S SURFACE.

substance. With a microscope you might see that the pieces are little bits of real rock. Ask your teacher to explain the microscope. Now take two pieces of rock and rub them together until you have ground off some of their material, and compare it with the fine earth you have on the paper. You will find that the two are much alike. Now can you tell what land is made of?

The whole earth, clear down to its center, is a great ball of solid rock, with much ground-up rock lying upon its surface. On the top of this, covering part of the surface, lies water, and outside of, and surrounding the whole, lies air. In some places the ground-up rock does not cover the solid



A VIEW OF THE SEA.

rock, but in most places that which we see and walk upon is fine sand, clay, or soil, which was once solid rock.

Perhaps you wonder how so much of the solid rock came to be ground up. Notice, during a rainstorm, how the water running down the street or road carries pebbles in its course, and how these pebbles rub against, roll over, and wear each other away. Then notice, again, in the winter, how water soaks for a little distance into the rocks, and then freezes and forces off tiny pieces like sand. In the course of many winters the rock will thus crumble until it has turned to sand or soil.

In these and other ways, during thousands of years, the land we see everywhere has been made. Pieces of rock have rubbed against each other and have been ground up. Other pieces have been broken off by the freezing and thawing of water, which has soaked into them. Plants have grown, and died, and decayed, and thus soil has been made. If men bore deep enough in the ground-up rock, as in digging a well, they will reach solid rock, nearer the sur-

face in some places than in others, because in some places the soil or earth is not so deep.

We have been talking, so far, of the land. Men traveling around the earth find that they must cross large bodies of water which separate the land on one side of the earth from that on the other side. Water, as well as rock, is one of the materials of the earth. Perhaps you have never seen a large body of water. There are many places where you might look all around, and as far as you could see there would be nothing but smooth, sparkling water. No trees, grass, rock, nor houses. Nothing but water everywhere. Here is a picture of the edge of the sea.

It is believed that many thousand years ago the solid earth was entirely covered by water, and that changes took place in its form which caused some of its substance to rise above the level of the water. The part which has risen is land, and is much smaller in extent than that which is still covered. There is **three times** as much water surface, or sea, as land; so we say

that the land forms one-fourth of the whole surface of the earth, and the sea three-fourths.

For a long time men did not know that this great body of water rested on the rock. But they began, after a time, to try to find out its depth by lowering lines with weights on the ends. In this way it has been learned that, while the water which covers so much of the earth is only a few feet deep near the shore, in many places farther out it is two or three miles, and in some places five miles, deep.



ROCK WORN BY WEATHER.

The water of the earth seems to us very great in amount, but when we compare its bulk with that of the earth itself, which is 8,000 miles through, even a depth of five miles is not really very much. If we should take a globe a foot in diameter, and put water enough on it to compare with that on the earth, the water would be no thicker than very thin paper; there would scarcely be enough on the globe to wet it. Five miles is about one sixteen-hundredth of the earth's diameter.

Ground-up rock, as sand and other earthy matter, has been found at the bottom of this great body of water, which shows that those parts of the earth now under water are much like those that are bare. The



ROCK WORN BY WATER.

rock that rises above the water, called land, reaches in some places only a few feet above its surface, and in some places four or five miles. The uneven land is a roughness of the earth, much as the uneven skin of an orange is a roughness of that fruit, but, considering its size, the earth is not nearly so rough as the orange.

Air is a material of the earth, which lies upon the outside, covering both rock and water.

LESSON 4.

The Earth as a Planet.

When an apple drops from the tree it always goes toward the earth. It is 'pulled by something. All things are pulled toward the center of the earth, whether they are moving or not. This strange power which pulls all the time on everything is called **gravity**.



OVERCOMING GRAVITY.

Different substances are thus pulled by gravity with different degrees of strength. Air is pulled lightly; rock and water are pulled strongly. When you lift anything, the force you use is enough to overcome the force of gravity.

The force with which gravity pulls is called weight. The amount of force with which a certain-sized piece of iron is pulled by gravity is called a pound, and that is a unit of weight. If you weigh eighty pounds you are pulled downward by gravity eighty times that unit of weight. The force of the earth's gravity never ceases for an instant. The direction in which it pulls is called down; opposite to that is called up. Whenever a thing yields to gravity and moves, we say it falls.

The materials of the earth would not hold together but for this force. Air, water, and fine rock would fly away in the sky.

The earth can not fall; so it does not need to rest on anything. It floats in the sky as the moon does. There is a force which keeps it swinging around the sun, much as a boy may keep an apple or stone, on the end of a string, swinging around his hand. There are other bodies which swing around the sun as the earth does; these and the earth are called planets. The time in which a planet moves once around the sun is called its **year**. We use the earth's year as a unit of measure for time.



Have you ever tried to look at the



THE STARS AS SEEN THROUGH A TELESCOPE.

sun? How did it affect your eyes? A piece of iron gives out no light when cold, but at white heat it will dazzle you with its brightness. Remember this—anything, when made sufficiently hot, gives forth light. The sun gives light, because it is very, very hot. If you would like to see the sun without having it dazzle your eyes, take a piece of glass and hold it over a smoking lamp until it is covered with soot. Now you can look at the sun through it, and see that it is a great, fiery ball. It is many thousands of times as large as the earth. It gives light like a great lamp, and the earth and other planets are lighted by it.

Have you ever noticed how heat comes from a fire in a stove or grate? The sun is the fire by which this earth is warmed. It is so far away that the swiftest railway train could not run an equal distance in



PROPORTIONATE DEPTH OF AIR UPON THE EARTH.

hundreds of years, yet it is so hot that we feel its heat here on the earth.

Go out of a bright, starlit evening and try to count the stars. There are thousands in sight, and all except two or three are really suns like our sun. The two or three are planets. Some of the stars are much larger than our sun, but they are so far away that they seem like tiny specks of fire.

The sun is much larger than all the planets together, and by attraction it holds them in their places, although it is millions of miles away from them.

If there are people on the other planets, our earth is so far from them that, when they look at it, it seems to be only a bright bit of light, like a star.

Eight planets—great, round bodies like the earth, some larger and some smaller—swing around the sun. The one nearest to it is called Mercury; then come Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. When you view the Evening Star you are looking at one of them. They can be easily known, because they do not twinkle as the other stars do, but shine with a clear, steady light.

Some of the planets have several moons, which revolve around them as our moon does around the earth.

The moon and the planets do not give light. The light which seems to come from them is really sunlight reflected by them to our eyes, just as light may be reflected from a looking-glass. Some of the planets are hot, but not hot enough to give light as the sun does.

LESSON 5.

The Air.

If you wade through water you can feel it quite plainly, because it is heavy. When you walk through air you hardly feel it, because it is light. If you stand in a running stream you feel the moving water as it rubs against or pushes you. The movement of the water is called the current. When standing in moving air you may feel it rub against or push you in the same manner. Its currents are called winds. As water sweeps pebbles, chips, and other things along, so air carries with it leaves and other objects. The currents of both water and air are caused by gravity.

Torrents of water, as they tear their way down a valley, sometimes destroy or carry off houses and trees, and so a sweep of wind may come with such force as to uproot trees and scatter the timbers of dwellings. As water is a useful servant of man in turning the wheels of his mills, so the air is made to labor for him in turning wheels and pushing vessels along upon the sea.

The main body of the earth is solid. The water resting upon it is fluid, and so, too, is the air, which rests on both of them. As the great body of water is called the ocean, so the great body of air is called the atmosphere. It lies upon the earth more than 100 miles in depth. Air is blue, though the color is so faint that it can be seen only by looking at the sky when the air is very free from dust or moisture. As you look at the clouds you may sometimes



A WIND STORM ON A PRAIRIE.

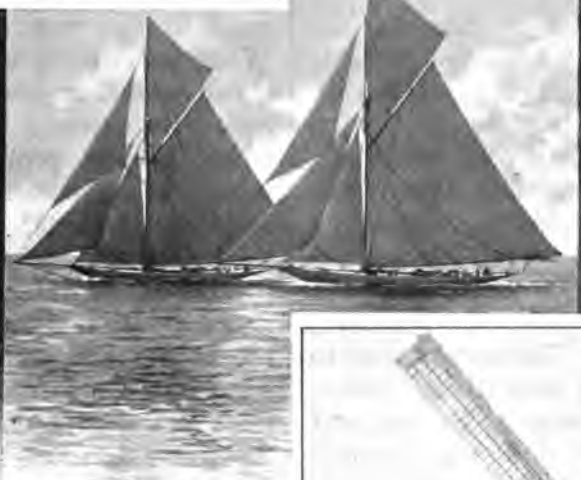
see patches of blue that are wondrously beautiful.

Do you ever stop to think how much the comfort and happiness of mankind depend upon those things which we learn about in geography? We might live if water did not sparkle and dance in the sunshine, and if the air were not beautiful in color, and joy-inspiring, and refreshing in its breezes. We might live if the flowers were colorless and lacking in perfume. The earth is designed not alone that man may live, but that he may be happy.

We breathe the air, and can live but a few minutes without it. It is composed of gases mixed together, one of which, called oxygen, is necessary to the support of our bodies. When our lungs expand, the weight of the air forces it in through our mouth and nostrils, and the oxygen separates from

it and enters the blood, after which the rest of the air is pressed out as the lungs contract. This action of the lungs is called breathing.

Air that has been breathed is not fit to be breathed again; it is poisonous. If a number of children were shut up in an air-tight school-room, in a short time they would have breathed all the pure air in it, using up all its oxygen; the remainder would be poisonous, and they would die shortly. If the room were not very tightly closed, sufficient air would come in at the cracks to afford some oxygen, but not enough, and children would be sick. Children at school are often sick because not enough fresh air comes into the room. We would not drink foul water, nor eat bad food; why then breathe foul air?



SAILING VESSELS.



A WINDMILL.

LESSON 6.

Forms of Land.

The land is not all in one body, but in many; and these lie at various distances from each other, separated by water. Men have sailed on the great sea until they have learned where these bodies of land lie, how large they are, and how many of them there are. Three of them are



A HIGH, ROCKY COAST.



A LOW COAST.

crooked. No two land bodies are shaped alike. In some places along a coast the land is but very little higher than the water surface, and a boy might wade for a long distance out into the water. In other places the land is high and steep at the water's edge, like the side of a great building, and if a boy were to jump into the water he might sink many feet.

very large, these being known as **continents**, and there are thousands of smaller bodies, called **islands**. What lies all around a continent? What lies all around an island? What is the difference between a continent and an island?

The edge of a land body where the water joins it is called the coast. Here great waves may be seen, as they roll up on the sandy beach, or against the rugged rocks, or the vessels which sail along on the water. Since islands and continents are very uneven in shape, the coast-line is more or less

Sometimes a part of the land reaches out into the water, so that it would be an island if it were not joined by a narrow strip to the mainland. It is almost an island, because it is almost surrounded by water. There is a word which means "almost an island," and that word is used as a name for such a form of land. The word is **peninsula**. What is a peninsula?

If the neck, or strip, of land which joins the peninsula to the mainland is narrower than the peninsula, it is commonly called an **isthmus**.

Sometimes the coast bends so that there is a point of land. Such a point is called a **cape**. If the land which makes a cape is high above the water, and rocky, the cape is sometimes called a **promontory**.

Here are three pictures of some land, with the waters which adjoin them. Can



AN ISLAND.

A CAPE ON THE COAST OF HAWAII.



A PROMONTORY.

you find the coast in each? Do you notice the cape in the center? Some islands lie far out from the edge of the continent, while some are very near. How does the one in the picture lie? Where does it come nearest the coast? Suppose it were joined to the mainland by a narrow strip of land, what would it then be? Why is the lower picture called a promontory?

Have you ever walked along a coast, on the shore? Did the land come gently down to the water, low and even, or was it high, clear up to the edge, so that you might look down on the water far below? Was the land sandy and smooth where the waves broke, or rough and rocky? Could you pick up pretty pebbles, worn smooth by being rubbed by the waves against sand, rocks, and other pebbles? Could you pick up shells on the beach? Were bright bits of seaweed scattered along it? Perhaps some vessel had once been dashed against the shore and torn to pieces by the huge waves during a storm. Did you see any old timbers that might once have been a part of such a ship?

Draw upon your slate, or on the blackboard, a long, crooked line. Think of this



A WRECK ON THE BEACH.

as a coast. Try to see in your mind, on one side, hills, and fields, and trees, and fences, and houses. Along the line try to see a flat, low, white strip of sand, called a beach, with grass and bushes on the land side, and rolling waves on the water side. Try to see, beyond the beach, a wide stretch of water with ships sailing on it. Now draw an island out in the water. Imagine the beach along the shore of that island, and the trees, houses, etc., on the land. Could a vessel sail between the land and the island? Yes, because there is water there. Now change the island to a peninsula. What must you draw to do this? Do you remember about the neck? After you have changed the island to a peninsula, rub out the isthmus, and draw the coast-line to the island, so that it will be a cape. What would you call that cape if you should think of it as high and rocky?

Many islands along a coast were once parts of the mainland. The sea has beaten against the shore for thousands of years and worn away the soft parts of it, leaving hard rocky portions reaching out as capes or peninsulas. In some places it has cut away the strip that joined these to the mainland, leaving them as islands.

LESSON 7.

Forms of the Ocean.

We have spoken of the great body of water which covers three-fourths of the earth's rock surface.



This is called the ocean, but is also frequently spoken of as the sea.

Just as the land may reach out into the ocean, forming capes, peninsulas, etc., so may the ocean reach into the land. A body of water shaped like a cape or peninsula is called a **bay** or **gulf**. Draw a coast-line as before, but bend it inward instead of outward, and then try to see a great surface of water, with the shore reaching around three sides of it. What would you call that body of water? Some parts of the ocean lie between land bodies, somewhat by themselves. Such parts are called **seas**.

Sometimes sailors find a neck of water which joins two larger bodies of water, the same as a neck of land (called an isthmus) joins two bodies of land; such a neck is called a **strait**. A strait which is very wide and long is called a **channel**. An inlet of the ocean where the water is not very deep is called a **sound**.



BOATS APPEARING ABOVE THE HORIZON.



ICE PEAKS ON MUIR GLACIER.

In going from one continent to another, some part of the ocean must be crossed. Perhaps you or some of your classmates have crossed it. If not, perhaps the parents of some of you have. You will enjoy talking with someone who can tell you about the ocean, as he has seen it. He can tell you that when the horizon is viewed from the ship, nothing but water can be seen to where the sky seems to come down. When a ship is first seen far away, the tops of the masts appear first above the horizon, then her upper sails, and, as she gets nearer, more and more of her sails show; at length she comes within the horizon line, and can all be seen, the sea over which she has sailed being like a rounded hill.

If you have never been to the sea, you may be surprised to learn that there is salt in the water of the ocean. If you put a heaping teaspoonful of salt in a pint of water and taste

the water, you will know about how salt the water of the ocean is. Sailors are very careful to carry fresh water in their ships, as they can not drink the water of the sea because of its saltiness.

Try to learn, from some one who has crossed the ocean, what country he came from; in what kind of a vessel, how large she was, how many days she was in crossing, and what made her go; in what kind of rooms people sleep on board vessels; in what manner they eat. Ask whether he saw whales, or sharks, or icebergs, or other vessels, or floating wrecks, or birds; whether he sailed past any islands; how the land appeared when he first came in



AN ICEBERG.

sight of it; whether the passengers were in a storm at sea, and, if so, how it seemed; how the vessel came into dock for the people to go ashore, etc.



A WHALE.

Icebergs float in some parts of the ocean. Do you know what an iceberg is? Berg means **mountain**, and therefore iceberg means **ice mountain**. The weather in some parts of the earth is very cold. During the long winter, ice forms there in thick layers, which do not thaw in the short summer, so that each winter new layers are added, until mountains of ice are formed.

These slide slowly down to the shore of the ocean, where they break off in huge pieces, sometimes as large as a thousand great buildings all in one, and float along in the water. Such a great mass of ice is called an iceberg. Ships have been known to run against them and be crushed. These great masses of ice float on until they reach warmer parts of the earth, where they slowly melt away.

The great mass of ice, from which an iceberg breaks off, is called a **Glacier**. Opposite is a picture of some ice peaks on the top of one of these glaciers, and also an iceberg which has broken from a glacier and is floating away in the water.

Some of the land was in ridges and mounds, not so high nor so rough; these were **hills**. There were low places between the hills and mountains; these were **valleys**. There were long, wide, nearly level reaches of land; these were **plains**. The hills, and valleys, and plains were all covered with earth from rock which had worn fine under the water.

The sides of hills and mountains are called **slopes**. A slope is a slanting surface. Lay your slate flat on the top of a table and drop a little water on the middle of it. If the water does not run toward the edge, then the surface of the slate is **level**. When a surface is level, no part of it is



A ROCKY MOUNTAIN SCENE.

LESSON 8.

Surface of the Land.

When the land came up from below the water, most of it was in great, jagged ridges or peaks of solid rock, with sand, gravel, and other fine pieces of rock on top; these were **mountains**. Some of them reached as much as five or six miles above the

higher than any other part. The surface of a pond on a still day is level. Now carefully push your pencil under the end of the slate so as to raise it a little. The slate is no longer level, because one end is higher than the other. It is down hill from the high end to the low end; it is a slope. You notice that as soon as you change the level into a slope, the water starts down the slope. Let us see what



A WESTERN PLAIN.

causes it to do so. Gravity pulls water, like everything else, straight down. As soon as the slate becomes a slope, the water finds a way to get down by moving sideways, and so it starts. When you slide down hill, your sled and you on it are pulled down by gravity, and the sled slips ahead on the slope, in order that it may go down, just as water does.

Take a piece of paper and crumple it, roll it, and twist it into a wad. Now smooth

it out as much as you can, and spread it on the table. You can not get it quite smooth. In a small way it is like the surface of the land. There are little hills all over it, and between the hills are valleys. Now fold it roughly lengthwise and again spread it out. This time there are big wrinkles, much higher than the hills were. These are like mountain ridges, and the low places between them may be thought of as valleys. The surface of the earth is most of it wrinkled into hills, and mountains, and valleys, much like that of these crumpled papers, only on a far larger scale. Some ridges of mountains are thousands of miles in length, and some of the valleys hundreds of miles across.

Always, from the top of a hill or mountain to the bottom of the valley between it and the next hill or mountain, there is a slope, down which water will run. So the surface of the earth is mostly made up of slopes. Many of the slopes are so nearly level that they are called plains.

Every time it rains, the water flows down the slopes. It takes up fine earth, which



A VALLEY.

makes it roily or muddy, and carries that earth along, down into the valley. Sometimes it comes down the gorges with such force as to bring huge pieces of rock with it. This has been going on for thousands of years. Much of the loose, fine earth which was on the hills and mountains, and has been crumbled off from the rocks by frost, etc., has been thus carried down from the tops and sides of mountains and hills. Some of it has been carried for many miles.

In this way many of the valleys which in the beginning were steep and rocky have been partly filled, and the mountains gradually worn down until they are not nearly so high as they once were. In such valleys the earthy matter was left by the water in level layers, and thus the middle parts of many valleys have become great, nearly level plains. Sometimes men in digging a cellar find level layers of different kinds of earth that were spread by the water at different times during the thousands of years that have passed. There may be several inches of loam on the top, and beneath that a layer of sand, and then a layer of gravel, and then one of clay, etc. There are places where men find pieces of trees hundreds of feet below the surface, where the water floated them, and left them, and then, year after year, spread earth layers over them, thus building the land higher and higher above them.

Every time it rains some earth material is carried by the water down the slopes. In this way slopes that were once short and steep have been made long and easy, so that water now runs quite slowly down them.



NORDFJORD AND LOEN, NORWAY.

LESSON 9.

Moisture.

We have said that man can not live without air; neither can he without water. Can you think how terribly you would suffer if you could get no water? Much more than half of our bodies is water, and the same is true of all animals. In all living plants there is much water. Apples, peaches, potatoes, cabbages, etc., are nearly all water. Nothing that lives, either animal or plant, could do so without water.

You know that the rain comes from the sky, but have you thought how the water, which makes the rain, gets up there?

All the water which we have upon the land comes to it through the air. Did you know that the air holds water? Notice the steam from a kettle in which water is boiling. The water will boil away, all going off as steam. Steam is water in little particles finer than dust. It goes out into the air, and that water which makes it is taken up by the air, much as common water is



SNOWFLAKES.

taken up by a sponge. As the air takes it, the little particles are divided into still smaller ones, until they can not be seen. Water in the air, when it can be seen, and is not rain or mist, forms fog. The steam which you see from a kettle is fog, like that which you sometimes see outdoors.

Do you know what becomes of a fog? Sometimes its particles of water go out of sight as steam does, and the air becomes clear, and sometimes the fog is carried upward by the wind and becomes a cloud. A cloud is only a mass of fog, blown along by the wind. On the preceding page is a picture of a village in Norway, with a fog floating upward as a cloud. It is not unusual for people on high mountains to look downward and see clouds and rainstorms below them.

Most of the water which goes into the air does so without looking like steam. You have seen wet clothes hung out to dry. When we say a thing dries, we mean that the water in it leaves it and goes into the air. There is nothing that looks like steam or fog about the drying of clothes, and yet the water disappears. No dirt, or anything mixed with water, goes into the air with it. The water of the ocean, when it is taken up, leaves the salt behind, and that which rises from foul pools is perfectly pure.

Air takes up, or, as we say, absorbs, water from any surface that is wet with it. It is always doing this. How quickly the ground dries after a rain! Put some water in a dish and see how soon it will all be gone. Think how much wet surface there is in the world, from which the air is always absorbing water—the thousands and thousands of miles of ocean and of land! How very much water must be held in this great blanket of air, which is so thick everywhere upon the earth!

The air does not keep all the water it absorbs. You have seen it give back water to the sea or the land. Tell from what part of the air the water comes. Does it fall on hills and mountains, as well as on valleys and plains? What do you call the giving back of water?

The rain falls in drops. The little particles in fog or cloud run together and



DEW ON ROSES.



CLOUDS OVER THE SEA.

make larger ones, such as we see in mist, and these run together and make drops, and gravity pulls those drops down to the earth. Sometimes the wind blows, so that the drops fall slantingly instead of straight down.

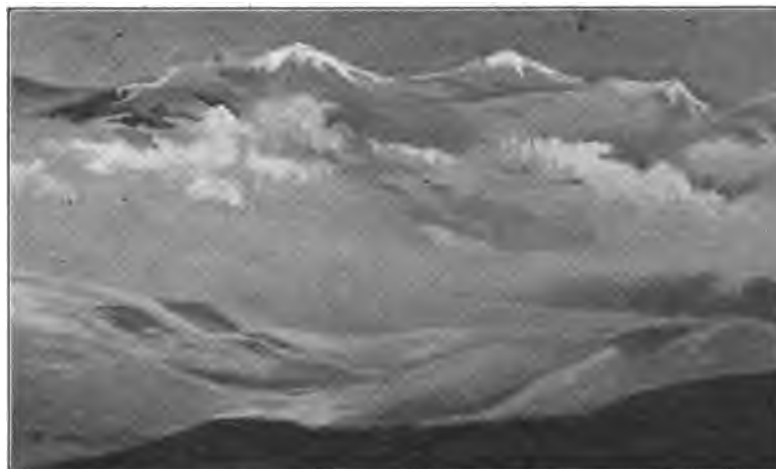
In cold weather the little mist particles freeze up in the air, forming beautiful little crystals, which fall as snowflakes. Did you ever catch snowflakes on a cloth and look at them? They look like bits of frostwork which forms on window panes. Sometimes raindrops freeze on their way down. Then they become hailstones. As they fall, other drops join them and freeze to them, so that they are often quite large when they reach the ground.

Men have learned that warm air takes up and holds more moisture than cold air. Cold makes the moisture in the air come together in particles and drops. You may notice, in winter, that the warm air in a heated room, as it moves against the window glass, is cooled by the cold panes, and its

water forms in drops on the glass and runs down. Sometimes it freezes on the glass and forms beautiful crystals like snowflakes. In the night, in summer, the grass and flowers become cool, and drops form on them as on the window in winter. These drops we call dew. The air which comes from your lungs when you breathe is warm and moist. Did you ever notice how, in cold weather, the cold turns the moisture of your breath into fog?

When it is cold high in the air, the moisture comes together in little, dust-like particles, large enough to be seen, and forms clouds. Do you know that the clouds move swiftly? Watch one and see. Few people ever spend time watching the clouds but they are very interesting. The great masses slowly roll into forms and changes of color take place as the sun lights them. Watch the edge of a cloud for a few minutes and see it change. If it is cold up there, the cloud will grow larger; if warm, it will fade away.

All the moisture which goes from the land and ocean to the air comes back as rain or snow. The water on the land comes to it from the air, and is called the **rainfall**. What becomes of the rainfall? We will talk about that in our next lesson.



ABOVE THE CLOUDS.



A RIVER DRAINING A VALLEY.

LESSON 10.

Drainage.

When the water on anything runs off slowly, we say it **drains**. The rainfall upon the land either goes back into the air or drains into the ocean. Flowing water on its way to the sea is called **drainage**. When it rains, some of the water is pulled down into the ground by gravity. It finds its way between the little bits of gravel and sand, until it reaches solid rock or thickly packed clay, through which it can not pass. As soon as the ground has soaked up all it will hold, the remaining water is moved by gravity down the slopes in little **rills** and **rivulets**. These join, and form larger streams, which are called **brooks**, and these join so as to form still larger streams called **rivers**. The drainage from the two slopes of each valley thus gathers at the low part, where the slopes meet, and then moves down toward the lower end of the valley. When you see a river you may know that its water is the drainage of a valley, or perhaps of several valleys, and that it will keep on winding about, following the down-hill land, until at last it joins some other water body, or reaches the coast and flows into the sea.

A mountain or hill range divides the rainfall, so that a portion of it flows down one of its slopes and the remainder down that of the other. Such a ridge is called a **divide**. A divide may be so low that we would not even call it a hill.

Some of the rivulets and brooks, which help to form rivers, begin where the land is thousands of feet above the level of the sea, and their water, while it is getting

down to the level, moves along the declining surface for many hundreds of miles. Oftentimes the water of a river, in following descending ground, falls down steep places and over rocks, forming rapids.

Lakes and **ponds** are low places in the land, filled with drainage water. Usually there is a low place, at the edge of the lake or pond, where water flows over and out when it is full, and forms a river, which flows on until it reaches some other river or the sea.

Now let us see what becomes of the water which goes down into the ground. After the rain is over, the moist earth



RAPIDS IN A RIVER.



A MOUNTAIN LAKE.

begins to give up its water to the air, or, as we say, to dry, and thus some of the water goes back into the air at once. Besides this, that water which we spoke of as going down to the rock or clay moves along down the slopes of it, much as it might on the slopes at the surface. It may thus find its way clear to the bottom of the valley and into the river, without coming to the surface at all. Some of it comes, however, to the surface again in the form of little streams flowing out of a bank or side-hill, forming a rivulet or brook. Such a stream coming out of the ground is called a **spring**.

In nearly all places, water is thus making its way along under ground, and can be found by digging down to where it is. A well is a hole dug or bored in the earth, for water.

Have you sometimes wondered where the water in the rivers and brooks came

from when it has not rained for weeks? It comes from the underground streams and gets into the surface streams through the earth at their bottom and sides.

The beginning of a river is called its **source**. The end, where its water goes into some other body of water, is called its **mouth**. The low part between its banks, where the water runs, is its **channel**. The streams which flow into it are its **branches**. The land from which the water of a stream and its branches drains is

the **basin** of that river.

It is always colder up in the mountains than it is down near the level of the sea. The water which falls from the air in the mountains descends mostly in the form of snow. This snow does not melt until late in the spring or in the summer, and then the water from it flows down the mountain slope and feeds the rivers.



THE JUNCTION OF TWO RIVERS.



THE DELTA OF THE MISSISSIPPI.

LESSON 11.

How Drainage Changes the Surface of Land.

You have noticed that when we have a shower the water in those little rills which form and flow along the ground is roily and muddy, and also that fine, earthy matter and even pebbles are carried along down hill by it. What you see in the little rill takes place in all streams, at all times. The water everywhere, as it flows, takes up soil, sand, clay, etc., as it has been doing for many thousands of years, and carries it down the slopes into the valleys and the sea. In this way most of the great plains of the earth have been formed. The mountains and hills are not so high as they once were, because their material has been washed down; and the valleys are not so deep as they once were, because they have been filled up. Much land along the coast has been made by the earth thus brought by rivers. The surface of the land is always changing by this action of drainage.

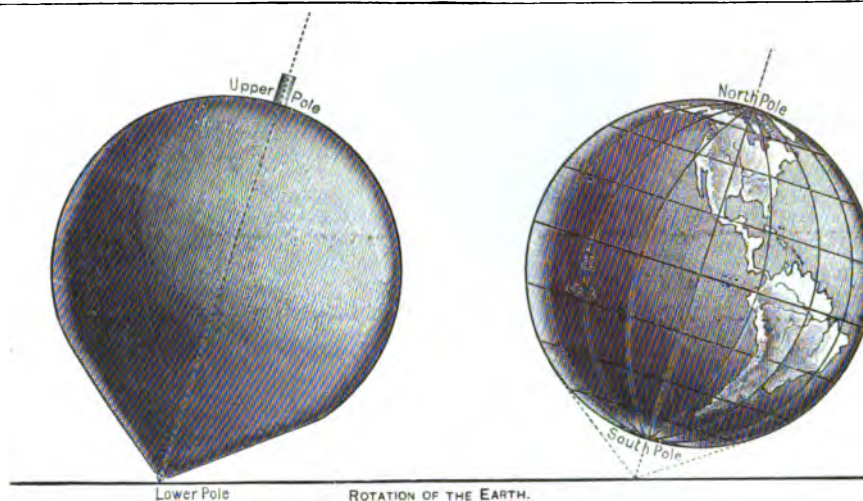
In the short life of a man the change is not easily seen, but in a thousand years it is, in some places, very great. There are cities which once were reached by the sea, so that ships could sail to them, but which are now several miles back from it, because new land has formed in front of them out into the water.

Water which flows swiftly will carry much earthy matter. When it ceases to move swiftly, this matter settles to the bottom. The rapid current of rivers ceases when they reach the sea, and as their water becomes quiet, the earth they carry sinks, and helps to fill up along the edge of the sea, and thus after long years land is made. Such land is very good. There are thousands of miles of it, and upon it dwells a large part of the human race.

The body of land that is formed at the mouth of a river by the earth which it brings down is called a **delta**. This earth causes the river to divide and to pour its water into the sea by many streams.



SURFACE CHANGED BY DRAINAGE.



LESSON 12.

Daily Motion of the Earth.

We learned that the earth moves, or, as it is better to say, revolves, around the sun. The earth has another motion; it spins, or rotates, like a top. Look at the picture of the top above; think of the top as spinning toward the right. It has a spindle; its point is one end of the spindle. Where is the other end? Does the top, as it spins, seem to turn on that spindle?

Try to think of the spindle of the top as being very small; as small as a hair; a thousandth part as large as a hair; so small that it can not be seen. Try to think of it as being there—knowing it is not there—or, which means the same, imagine it.

The ends of a spindle are called **poles**. How many poles are there to the spinning top? Where are they? An imaginary spindle is called an **axis**.

The earth rotates as the top does, and we imagine it to have a spindle which reaches from surface to surface. This imaginary spindle is called the earth's axis. One of its ends is called the **north pole** and the other the **south pole**.

You have seen a top lean a little as it

begins to spin upon the floor. The earth leans like that, as it spins or rotates, but it does not need to rest on anything, as we explained in Lesson 4. It rotates with even speed all the time. All planets rotate as the earth does, the time of each rotation being called the planet's day.

The day of the earth is used as a unit of measure for time. The twenty-fourth part of a day is called an hour, and the sixtieth part of an hour, a minute. Thus the measures for time are derived from the movements of the earth.

We, upon the surface, go with the earth as it turns. We can not feel or see that we are moving, because all things around us—trees, houses, clouds, etc.—move with us.

If a person lives on the earth midway between the poles he moves a long distance with it each time it rotates. Can you tell how many miles he goes? If a person could stand at one of the poles he would not move any distance at all, while the one we speak of would be going all those thousands of miles.

A railway train can move at a rate of sixty miles an hour. But a person living midway between the poles moves at a rate of more than a thousand miles an hour.

LESSON 13.

Daytime and Night.



THE WANING MOON.

We have said that the time in which the earth rotates once is a day. It is not proper to say that that time is a day and a night, for the night is a part of the day, just as the morning or evening is. During a portion of each day we are

whirling along before the sun, so that it shines on us, and then, for the rest of the day, the earth is between us and the sun, so that its light can not reach us. The part of the day in which we receive light is called daytime, or **day**, and the part in which we do not receive it is called **night**.

Here is a picture of the moon, which shows one half receiving the sun's rays, while the other half is in darkness. It is day on the moon on the bright side, and night on the dark side. As seen from the moon the earth would look much the same.

The light which goes forth from any bright thing goes in rays, which are straight. These can not turn so as to go around to the other side of anything. Notice how this ball receives light from the lamp, in the picture. That part of the surface which the rays can reach is light, and the rest is dark; just half is lighted. So is it with the earth as it stands before the sun; the straight rays of light hit exactly half of its surface, leaving the other half dark.

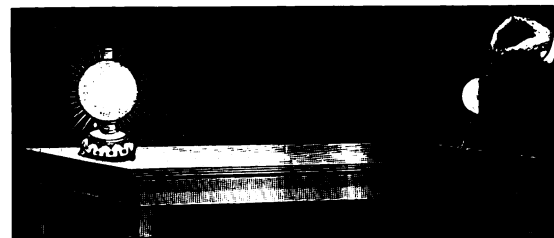
As the earth turns, some of its surface is all the time coming into the light, and some going into the darkness. If a fly

happens to be on the ball on the dark side, it will come around, as the ball turns, so that it can just begin to see the lamp. So a man who is on the dark side of the earth will come around, as the earth turns, so that he can just begin to see the sun.

When, in passing around, we first see the sun, it is **morning**. We move along on the earth under the sun, and it seems to us as though the latter rises from the horizon, and we say it is **sunrise**. When we are half-way across the range of light, the sun seems to be nearly over our heads, and we say it is **noon**; when we are just being carried into darkness, it seems as though the sun was setting below the horizon, and we say it is **sunset**.

When you are at home in the evening, take an apple and pass a needle or wire through it and turn it before a lamp, as in the picture, calling the lamp the sun, and the apple the earth. Stick a pin in the apple so that the head only can be seen, and another one on the opposite side. When it is noon for the first pin, what time of night is it for the second one? When it is about sunrise for the first, what is it for the second?

Place a row of pins around the apple, letting each pin stand for a man. Rotate the apple and see how someone is coming into the light all the time. Notice how, at all times, it is morning for somebody, and how, while at one part of the earth it is morning it is the middle of the forenoon at another, noon at another, afternoon at another, and night at another.



DAYTIME AND NIGHT.



NIGHT ON THE OCEAN—GREAT DIPPER AND NORTH STAR.

LESSON 14.

Direction.

When school closes and you and your schoolmates start toward your homes, you go different ways, or in different **directions**.

There are **four main directions**. The first is toward the north pole. Toward that pole is called **north**. The second is toward the south pole; toward it is called **south**. We know that the poles are opposite to each other. Which side of the school-house is the north side? Which the south side?

Take a ball and make a dot on it for the north pole. Where should another be placed for the south pole? Place a dot there. Make a dozen little crosses on different parts of the ball. Now draw a line from one of these crosses directly to the north pole. In what direction does that line run? Make another line from another cross, and keep doing so until you have a line from each to the north pole. In what direction does each line run? Where do all north direction lines meet? Now draw

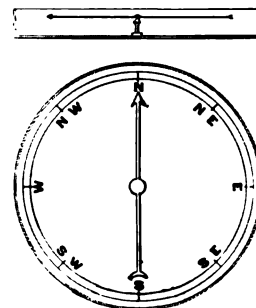
lines from the same crosses directly to the south pole. Where do all south direction lines meet? It is proper to say that a line from pole to pole runs in a north-south direction.

You know two of the four main directions. The other two are called **east** and **west**. West-east direction lines always lie squarely across north-south ones.

Make a short mark squarely across one of the lines you drew on the ball, and one end will point east and the other west. If you do this half-way between the poles, and make that cross-mark long enough, it will go clear around the ball, making a ring, or circle. This will be a west-east direction line. If you cross a north-south line nearer to one of the poles, the west-east direction line will pass around to the starting point in a smaller ring.

The earth turns exactly toward the east. Wherever a man may be, whether near one of the poles or midway between them, the earth is all the time whirling him toward the east.

As he is moved so that he comes where he can see the sun, it first appears somewhere in the eastern part of the horizon; and as he is whirled farther along, it seems to rise in the sky and move over and down to the western part, where it goes out of sight. In our country the morning sun is nearly east of us, and throws shadows westward; at noon it is nearly overhead,



POCKET COMPASS, TOP AND SIDE VIEW.

and throws shadows exactly to the north; at night it is nearly west of us, and throws shadows eastward. West-east lies squarely across the shadows at noon.

From the shadows you can tell which is the north direction. You may also tell which way is north, by the North Star. This is also called the pole-star, because it is right over the north pole. To find the pole-star, first find the great dipper, which is a group of bright stars shaped like a dipper; a line running from the two outside stars of the dipper will lead almost to the pole-star. See picture on preceding page.

There is another way to find the north. It is by using a **compass**. A needle properly prepared will always point toward the north. A compass is a needle so prepared, and hung in a little box.

A direction half-way between north and east is called northeast, and there are a northwest, a southeast, and a southwest.

LESSON 15.

Where We Live.

In Lesson 1 we learned that people live upon the land, and that the land is a part of the surface of the earth. In this lesson let us try to find where we, the people of this country, live. Do we live on land that is near the north pole, or near the south pole, or on land



which is midway between the two poles?

If a west-east direction line which extends around the earth half-way between the poles is thought of, half the earth's

surface will be on one side of that line, and the other half on the other side. Which half will contain the north pole? The south pole?

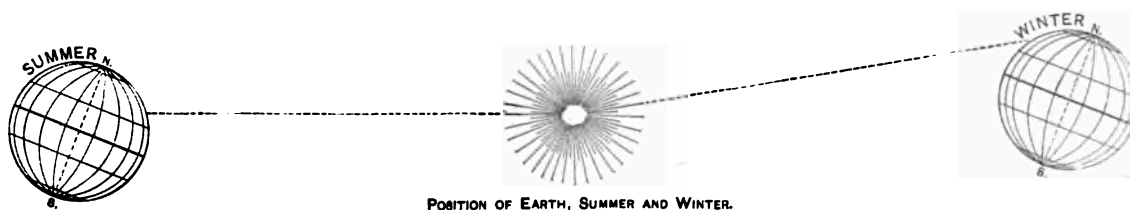
We need not think of a drawn line, but simply of a direction, for lines in geography are simply directions. This middle line, or direction, around the earth is spoken of so many times that a name has been given to it. It equates, or divides equally, the surface of the earth into two parts; so it has been named the **equator**. That half of the earth which contains the north pole is called the northern ———, and that which contains the south pole is called the southern ———.

Let us make words for those blank places. A body which is shaped like a ball may be called a **sphere**. Then we might put the words **half sphere** in each blank. Read that sentence, putting in the words "half sphere." These words would be right, but the word **hemi** means the same as half, and people are in the habit of saying **hemisphere**, instead of half sphere; so we will use that word in filling these blanks. What is a hemisphere? What is the Northern Hemisphere? The Southern Hemisphere? What is the equator?



Our country is in the Northern Hemisphere, and nearer the equator than the north pole. The land we dwell upon is a part of the continent which is called the western continent. A part of it lies

in the Northern Hemisphere, and is called North America. It is in that part that we live.



LESSON 16.

Yearly Motion of the Earth.

While the earth rotates, causing day and night, it is also swinging along on its great journey around the sun. It makes 365 rotations and a part of another while it revolves around the sun once. As the time of the little turning is called a day, so the time of the great revolving is called a **year**, and there are 365 days and a part of another day, in a year.

How often does your birthday come? What journey must the earth make during two of your birthdays? How many times has the earth gone around the sun since you were born? How many journeys has it made since the discovery of America?

The earth does not stand square to the sun, but as it appears in the picture in Lesson 12. Its axis seems to lean, so that the part we live on is sometimes turned toward the sun and sometimes away from it. We learned in Lesson 13 that rays of light are straight and can not turn. It is the same with rays of heat. We receive heat-rays from the sun. The earth gets its warmth from these rays.

In the diagram with this lesson we see a picture of the earth, upon the left, with a dotted line showing how a ray of heat comes from the sun to the earth, striking where we live. The heavy line across the middle is the equator, and the point marked capital N is the north pole. You see we live a little nearer to the equator than to the north pole.

This picture shows the earth when our

part is turned forward to the sun, and the heat-rays come most directly. The picture shows only one ray, but there are so many that every little point of surface receives them. When they come so as to strike the ground where we live, most squarely, they make the weather warm, and we call it **summer**. But when, in going round the sun, the earth gets to the opposite side, our part is turned backward from the sun, as in the picture on the right, and the rays strike the ground where we live, very slantingly; then our portion of the earth gets but little heat from them, and the weather is cold, and we call it **winter**.

The turning of our part of the earth toward the sun and away from it goes on very slowly while the earth is making its great journey. It takes many days to make change enough in the leaning of its axis to turn the weather from summer to winter. In midsummer the straight, warm rays become a little less direct each day, and the weather becomes less hot daily, until summer is past, and it is neither very hot nor very cold; it is half-way between summer and winter, and the nights begin to be frosty. The fruits, grains, and vegetables are ripe. What is the season called then, when it is between summer and winter?

Through autumn it grows colder and colder as the rays of heat gradually fall less directly, until at length they come very slantingly, as in the picture on the right. It is now winter. Again the earth's axis begins to straighten up before the sun, so that its rays come a little more directly, and the weather grows less and

less cold. By and by birds come back, and buds open and leaves grow from them, while the farmers plant seeds, and once more it is neither very cold nor very hot. What is the season called now? What will be the next season? How many seasons are there in the year?

Our different seasons are caused by the difference in the directness of the heat-rays received from the sun, and this difference is caused by the turning of our part of the earth to or from the sun.

Do you realize what is meant when we say a year has passed?



SUMMER.

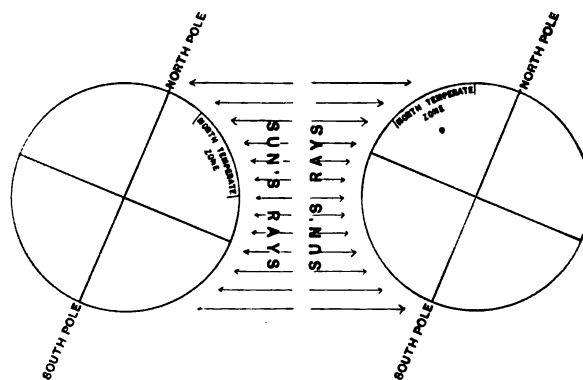
It means that the ice has melted, that the frozen ground has become soft, and that the seeds that lay in the soil and those placed there by the farmer have sprouted, and have sent their little leaves up into the light. It means that the birds have come back and built their nests in the trees, and that the buds of the trees have burst into leaves. It means that the plants that sprung from the seeds have blossomed, that flowers have appeared on the trees. It means, too, that the flowers on plant and tree have fallen, and in their place fruit has grown. It means that the



WINTER.

grain has been garnered and the leaves have withered and been blown away, and that the birds have flown before the coming cold of winter. It means that the ground has become frozen again, and that snow has come and covered the fields.

Here is a diagram which shows the effect of a change in directness of the sun's rays, as they fall upon the earth in midsummer and midwinter, the poles being now turned away from, and now toward the sun.



SUN'S RAYS. SUMMER AND WINTER.

NOTE TO TEACHER.—It is thought best to confine the discussion of the seasons here to the most elementary features, such as come within the personal experience of the children. Should you think it well to proceed further with the subject, it is suggested that the treatment be oral, and based upon the exposition given in the higher book of this series.



A POLAR SCENE.

LESSON 17.

Zones.

We have described the effects of the sun's rays of heat as they vary in directness upon **our** part of the earth. We will now consider their effect upon other parts.

If you look at the diagram of the earth in its position before the sun, on page 32, you may notice that in either position the rays from the sun may strike the ground, for quite a distance on either side of the equator, **very squarely, at all times**. This is true, no matter which way the axis leans; and the weather near the equator is consequently warm at all times.

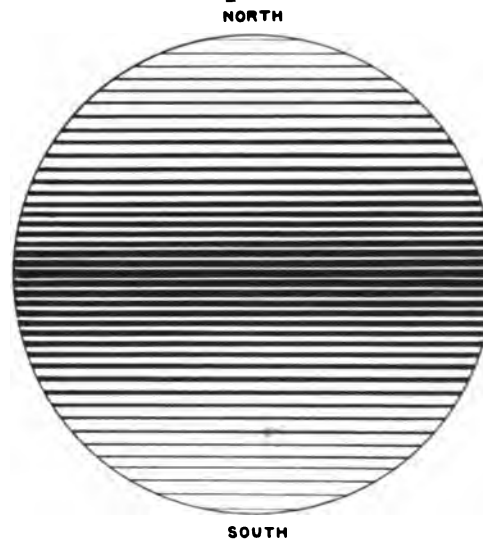
Most of the people who live near the equator do not know what ice or snow is. They wear but little clothing, for the weather is always warm. The sunshine throughout the year is hot and bright, like our sunshine in August. The hottest part of the earth is along the equator.

In looking at the diagram, you may also see that, near the two poles, the rays come very slantingly, **all the time**, no matter which way the earth's axis leans. Conse-

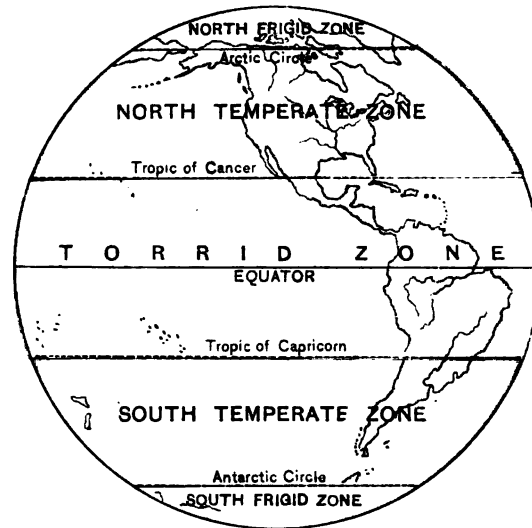
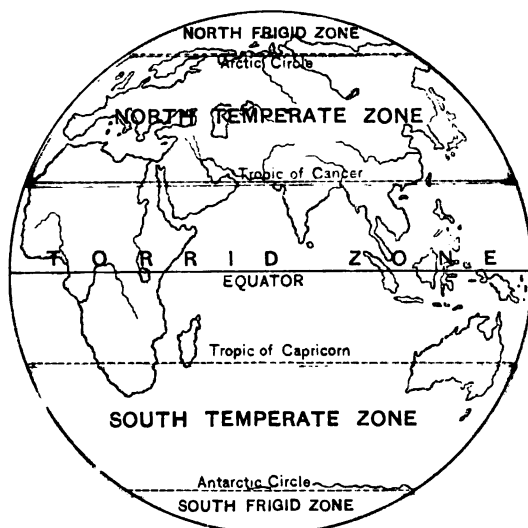
quently it is always cold in those regions. They never have a summer there like ours. Few people live near the north pole, and they wear very warm clothes, made of the skins of animals. No grains nor fruits grow there, and for hundreds of miles no plants at all. It is too cold for them to grow. Ice and snow form there, and do not melt; and this has been going on for so long a time that the ice is, in many places, hundreds of feet in thickness. It is even worse at the south pole than around

the north pole, for no people live near it, nor are there any plants. Very little animal life has been seen by those who have sailed nearest the south pole, but penguins are found in great numbers in that region.

The weather is hottest at the equator and coldest at the poles.



Here is a picture that shows how the heat of the earth varies. Where it is darkest the heat is greatest, and where it is lightest the cold is greatest.



Remember this—a country is hot or cold in proportion as it lies near the equator or near one of the poles.

NOTE TO TEACHER.—This is a statement of a general principle. The modifying influences which establish the other general principle, that altitude affects temperature, will be suggested later.

Our country is about midway between the equator and the north pole, so its average weather is midway in warmth between the heat of the equator and the cold of the north pole. The border of our country which is toward the pole is much colder than that which is toward the equator.

In what direction is the equator from us? The north pole? If we travel north many miles, will the weather grow colder or warmer as we go on? How will the weather change as we travel toward the equator? In what part of the world do people wear thin clothing? Why?

Men consider the earth as being divided into **belts**, according as it is hot or cold. A wide belt around the earth, midway between the poles, is called the hot belt. Usually two other words are used instead of "hot belt"; torrid means hot, and zone means belt; so people call that hot belt around the middle of the earth the **torrid**

zone. Outside of this zone the rays of the sun never strike the earth quite squarely. There is a belt around each of the two poles within which it is exceedingly cold. Now, frigid means cold, and so these polar zones are called **frigid zones**. That around the north pole is called the **north frigid zone**, and that around the south pole the **south frigid zone**.

The surface which lies between the north frigid zone and the torrid zone is neither very hot nor very cold, and is called by a name which means **not very hot nor very cold**. The word is temperate. The zone is the **north temperate zone**. We live in that zone. The one between the south frigid zone and the torrid zone is called the **south temperate zone**.

The zones do not have an even degree of heat all over them. The edge toward the equator is warmer than the edge that is farthest from it.

When we speak of the weather being hot, or cold, or wet, or dry, we mean for a day or, perhaps, for a week, but if we wish to speak of it for a year or some other long period, we say, instead of weather, climate. Thus, the climate of the torrid zone is hot, of the frigid zone cold, etc.

LESSON 18.

Altitude.

Altitude, in geography, means height above the level of the sea. The clouds over the sea are at an altitude of from one to three miles generally. The tops of some of the highest mountains are at an altitude of four or five miles.



A VALLEY AMONG THE MOUNTAINS.

If we wish for colder weather we can always find it by going farther away from the equator. As we live in the Northern Hemisphere, going away from the equator would mean, to us, going toward the north pole, or going north. A thousand miles either north or south makes quite a difference in the degree of cold.

But there is another direction in which we might go, and find a very great difference in the degree of cold, within a distance of three or four miles. This is the upward direction. The higher we go above the sea level, the colder we find the air to be. No matter how hot it may be on the ground, it is cold up where the clouds are. In the hottest day of summer you would need your warmest clothes if you were to go up a high mountain or up in a balloon.

Whether we get up above sea level by following up a slope hundreds of miles long, or up a steep mountain, or up in a balloon, we find it is colder the higher we go. So there are two great causes which affect the degree of heat or cold in a country — **its distance from the equator, and its altitude.**

At an equal distance from the equator, high land has a colder climate than low land, and in the hottest parts of the earth it is cold at the tops of high mountains. There are countries where the low valleys are very warm, and full of plant life, while up on the mountains, only four or five miles away, are snowdrifts that never melt. Even at the equa-



SNOW-CAPPED MOUNTAINS.

tor there are mountains which reach up so far above the sea level that their tops are always capped by snow. At the foot of one of these mountains grow oranges, figs, coffee, spices, and other **torrid zone** plants, and a little distance up are potatoes, wheat, and other **temperate zone** plants, while the top is as bare of plant life as is the **frigid zone**, and the snow lies many feet in depth. We judge the climate of a country mainly by two things: **Its distance from the equator, and its altitude**

LESSON 19.

Plant Life.



A MOLD PLANT.

We have spoken of air and water as things without which man can not live; and we have seen that air abounds everywhere, and that water is present nearly everywhere. Man needs something else—food. His principal food is plants, though he eats, besides them, the flesh of animals, most of which have grown by eating plants. So man

can not live without plants, and consequently he dwells in those parts of the earth's surface where they thrive.

Plants vary much in size. The largest are trees, and among the smallest kinds are mold plants. You might not think that the mold which grows on old, damp bread, leaves, and other substances consists of plants, but when seen through a microscope it appears like forests of trees.

Do many plants grow in our country? Mention some that you know. Mention some plants that we eat raw; the stalks and leaves cooked; the seeds raw; the seeds cooked; some the seeds of which we eat whole; ground fine; some which furnish sugar; some of which we eat the roots; the part of the wheat plant that is eaten. What must be done to that part before it is ready to be eaten?

We do not eat grass, yet we should be without some kinds of food if there were no grass. Why?

Can you tell what plant gives us the material from which a shirt is made? A

handkerchief? A rope? A rubber shoe? A board? Corks? Some plants which furnish us fuel? The coal which is dug from the earth and burned to produce heat is the remains of what was once living plants.

Plants spring up from seed, and grow, and die. They absorb nourishment from the soil, through their roots, but mainly from the air, through their leaves. So we say they live, and we speak of such life as **plant life**. Plant life depends mainly upon warmth, though it must have water. In those parts of the earth where the weather is the hottest, plant life thrives most, if it has moisture, and where it is the coldest, least.

The same shading in the picture on page 33, which shows where the heat is greatest and least, may be used to show also where plant life is most and least abundant.

Some plants require a very hot climate, and will grow only in the torrid zone. The rubber tree is one, and various spice plants are others. Some will grow in the warmer parts of the temperate zone, as the orange, lemon, fig, coffee tree, rice, etc. Others grow best in the cooler parts of the temperate zone, as wheat, oats, potatoes, etc. Those that grow nearest the poles are mosses and lichens.



A RUBBER TREE.

LESSON 20.

Animal Life.

Like plants, animals require air, water, and heat, and they also need food. They do not absorb this as plants do, but eat either plants, or the flesh of animals, or both. Name some animals that eat only plants; that eat only flesh; that eat both plants and flesh.

Since animals depend upon plants for food, they abound most where plants grow freely, that is, where it is warm, and water is plentiful.

Animal life is higher than plant life, because animals have **senses**, which plants have not. They can **see, hear, smell, taste, and feel**, and they have **the power of moving from place to place**.

Anything that lives, and has any of the senses, is an animal. Birds, fishes, reptiles, insects, and worms are animals, quite as much as horses, oxen, dogs, and other lower animals.

Like plants, animals vary much in size. Among the larger ones are elephants and whales, while some are so small that they can be seen only through a microscope. A drop of water may contain thousands of them. The entire group shown in the picture could be covered by the point of a needle.

Animals are useful to man in many ways. At first all of them were wild, but some were tamed by man, and their young grew up under man's care. That care, being kept up for thousands of years, has altered their ways of living,



A YOUNG ELEPHANT.

so that it seems natural for some kinds to be tame and to be subject to man. Name some kinds of tame, or domestic, animals, telling what each does for man. Name some wild animals useful to man; some wild ones which are not useful; that are injurious. Name animals that furnish us food; clothing.

Like plants, many species of animals can live only in certain kinds of climate. The elephant and the tiger, for instance, dwell only in the torrid zone. Some, the dog for instance, dwell in all climates.

Name some animals which have neither bones nor shells. How do they move? Name some which have shells, but no bones. How do they move? Some that have both shells and bones. How do they move? Some that have bones, but no legs, fins, or wings. How do they move? Name some animals that have scales; scales and fins. In what do such animals live? How do they move? Name some that live in the water part of the time, and on land part of the time. Some that have many legs; four legs; two legs. Some that have both wings and legs; wings but no feathers.



MICROSCOPIC LIFE.

Mention some animals which fly swiftly; run swiftly; some whose color is such that it is hard for their enemies to find them.



VIRGINIA DEER.

LESSON 21.

Man.

To have life—to see, hear, smell, feel, and taste, to be able to move from place to place by its own



MALAYAN.



NEGRO.



INDIAN.



CAUCASIAN.



MONGOLIAN.

power, and finally to die—is to be an animal. Some animals do not possess all these powers, but all animals have some of them, and all animals at length die.

Man possesses all of them, and his body dies, as do the bodies of the other animals. Plants have plant life; animals have animal life. Man has animal life; but man possesses a power beyond any that the lower animals have—the power of thought—and he has a life which is higher than either plant or mere animal life; it is the spiritual, or soul, life, which never ends.

Man, as an animal, is not so strong as many others—the horse, ox, elephant, etc. He is not so fleet as many—the dog, deer, etc. He has not the teeth, claws, nor strength to fight that the bear, lion, and many others have. He is feeble as a swimmer, compared with fishes, seals, etc. He can not fly. He can not hear nor see so well as many other animals. He has no natural covering of fur or feathers to keep him warm. So far as he is an animal, he is weak. But his gift of thought enables

him to use things, and his ability to do that makes him the most powerful of all creatures on the earth.

One of the most important things he uses is **fire**. By means of that and machinery, he can move faster than any other animal. He can, by these, lift and move, with ease, great loads that an elephant could not stir. By these he makes weapons with which he can easily kill the fiercest lions, bears, or other beasts. By these he can go in his boats faster than other animals can swim, even across the great oceans.

By these he can move through the air in balloons. By instruments made by means of fire,

he can see much farther, and hear much farther, than any other animal.

By fire he can be comfortable in places where animals would die of cold. With tools made by the use of fire, he makes garments which are better for his use than the coats of fur or feathers which the beasts or birds wear.

The lower animals, which do not fly, can not move over all the earth in search of the best places to live. The ocean stops them; high mountains stop them; wide regions, too dry for food to grow in, stop them. They must stay in the countries where they are. But man, by means of the things which he makes, can go where he pleases, and so he visits all parts of the earth, and dwells in all the good parts. It is true that some animals of the same kind are now found in nearly all countries, but it is because man has carried them there. There were no horses or oxen in America until they were brought by man.

Man makes use of the earth and the things that are on it, for his needs and comfort. How he does this, and what he may do, and what the earth offers to him, are among the things to be learned in the study of geography.

The countries of the earth differ from one another. The difference is mainly in climate, but the climate causes a difference in plants, the lower animals, and man. In our country the people are white, and most of them tall and shapely. They have straight hair, sharp noses, thin lips, high

foreheads, and the men have heavy beards. You can see such people every day. They belong to the **Caucasian or white race**. This is the leading and most powerful race. You have seen people with very dark skins, with hair very closely curled, and very black, with flat noses and thick lips. There are some of them here, but this is not their native country. They belong to the **black race**; they are called Negroes.

The race that lived in this country before the white people came here is now much smaller in number than it was then.

Its people are quite tall, straight, dark in color, not black, but chocolate brown or copper-colored. They have high cheek bones, black eyes, and coarse, straight, black hair. They belong to what is commonly known as the **red race**. They are called Indians.

Perhaps you have seen a Chinaman. There are some in our country, who

have come across the ocean. They are small in size, of a yellowish color, with dark eyes and coarse, black hair, which most of them wear in a long braid. Many of them shave their heads, leaving only the hair of this braid to grow. They belong to the **Mongolian or yellow race**.

On many of the islands in the ocean dwell people who are much like those of the yellow race, except that they are darker in color, being brown. They belong to the **Malayan or brown race**. You will learn more about the people of these different races and their ways, when we talk about the countries in which they live.



ELEPHANT PILING TIMBER.



COLUMBUS.

LESSON 22.

Continents and Countries.

So far we have spoken of no one country, but have talked about the great earth as a whole. We have learned about its shape, size, material, the forms of its land and water bodies, its motion around the sun and on its axis, and how it is warmed and lighted. We have spoken of the surface of the land, how it is moistened, and in what way the water flows from it back to the ocean. We have learned, too, some-

thing about the life that is on the earth — plant, lower animal, and human.

We are now ready to talk about some of the parts of the earth; and it is proper to begin by telling what the principal parts are, and in which one of them we live.

The continent upon which we dwell is called the Western Continent. Then there is another called the Eastern Continent, and yet another called Australia. How many continents are there?

For many hundreds of years it was not known that there were any continents. People dwelling on the Eastern Continent thought that to be the world. But at length it was discovered that another great continent lay far to the westward. Then it was that the new one got its name **Western**, and the old one **Eastern**. Some people called the newly found continent and its islands the **New World**, and the old one and its islands the **Old World**, and many speak thus of them to this day.

The red race dwelt in the New World, and was unknown until Columbus, the finder, carried some of the Indians to the Old World in his ships. The red man had known nothing of the Old World. White people found the New World, and soon many of that race made their homes there. Gradually since then the red race has passed away, until but few red men are left. White people have taken their place, so that now there are far more white people than red on the continent.



RED MAN OR INDIAN.

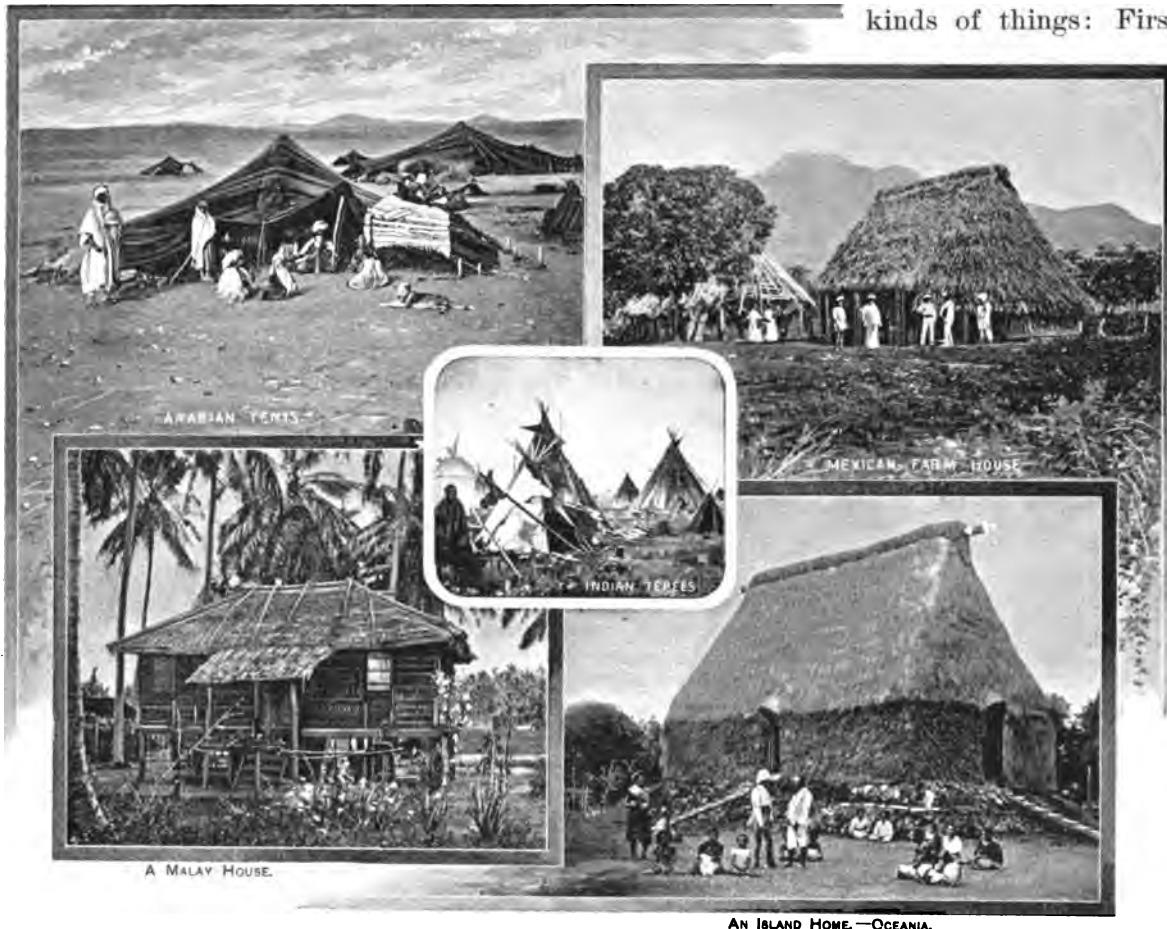
The Western Continent is called America, and the people who dwell upon it Americans. It is in two great parts, one north of the equator called North America, and one mainly south of it called South America. We live in North America.

The third continent, Australia, was not known until after the Western Continent

LESSON 23.

Civilization.

What are the things that people need most? If you think about this question and write down many things that people want most, you will find that the list you have made contains the names of three kinds of things: First,



had been discovered. It is the smallest of the three continents, the Western being next, and the Eastern largest of all.

Continents and islands are called natural divisions of land, because they are made by nature. These are divided into many countries by man. North America is divided into several countries, one of which is the United States of America. We live in it.

things that are to be eaten—**food**; second, the things that are to be worn—**clothing**; third, the things that protect us from the weather—**shelter**.

All people in all parts of the world want these three things and try to get them. This trying is called work. You may think that people work for money, but the money procures food, clothing, and



TAILOR BIRD AND NEST.

shelter; so these are really what they work for.

Even the animals work for food and shelter. Their clothing grows upon them as fur, feathers, and hair, but they work for food, and they dig holes or make nests, for shelter.

There are countries in which the people do not seem to want very much more than the animals do. When they have worked enough to supply necessary food and to cover themselves with the skins of animals, or other easily obtained clothing, and have made themselves huts to live in, they cease working, as they care for nothing more. Such people live much like animals, and are called **savages**.

In some other countries the inhabitants do not live so much like animals, but have wants for better clothing, better food, and better homes, and they work to obtain them. Such people are called **barbarians**.

In other countries the people have learned to want still more and better things and to labor to obtain them. These people desire to own lands, houses, and other property, and to have knowledge. They have better taste than barbarians, and love to have their garments and their surroundings beautiful. They have a knowledge of reading and writing, and they know how to manufacture many things. Such people are called **half-civilized**.

In other countries the people want and have all that is good which half-civilized people obtain, but have wants for still more things of a refining nature, such as elegant clothing, books, pictures, music, fine houses, splendid parks and gardens, railroads, steamboats, telegraphs, schools, churches, and many other things like those we have in our country. The people in such countries are **civilized**.

As the wants of a people are higher, it is compelled to do more work to supply them. Consequently a barbarous is more industrious than a savage people, and a half-civilized is more so than a barbarous one. A civilized people accomplishes most of all. Ours is a highly civilized country.

Most of the civilized people of the world belong to the white race, though in some countries the people of that race are half-civilized. The savages belong to the red, brown, and black races. Most people of the yellow race are half-civilized, but you will read some day of the yellow people of Japan. They are the only great people of that race that has become civilized, and in recent years they have adopted many American customs and become very powerful.



A SAVAGE WARRIOR.



LESSON 24.

Business.

When people are working they are busy, and that which they are doing may be called their busy-ness, or, as it is spelled, **business**. What does your father do? That which he does is his business.

In a civilized country people have many wants, and work in many ways to supply them. A man, for instance, may want hats, coats, shoes, knives, houses, wagons, books, papers, pictures, different kinds of food, and hundreds of other things. No man could produce all these for himself, because to do any one kind of work well requires

practice and all the time that a man can give, and he could not learn to do them all well. So usually each man chooses one kind of work and learns to do it, and does no other kind. He makes that kind his **business**.

Each man makes more of his particular kind of goods, or does more of his kind of work, than he needs for himself; so he exchanges either the work or the goods which he does not need, for other things he requires. The exchanging of goods is called trade. Some men make it their business to trade.

There are many kinds of business in a civilized country like ours. Among the leading kinds are farming, mining, manufacturing, trading, and professional work.

Farming is the cultivation of useful plants and the raising of useful animals. Manufacturing is the making of things such as cloth and furniture. Mining is the digging, from the earth, of coal, iron, lead, copper, stone, and other minerals. Trading is the exchanging of that which is produced by each of the different kinds of business, for the productions of other kinds or for money. Professional work is such as is done by teachers, doctors, lawyers, clergymen, etc.

The condition of man in civilized countries has been much improved by the invention of machines, which do work that was formerly done by human toil. Through the use of machinery all people now enjoy many comforts and luxuries which even kings could not obtain a few hundred years ago.

The business of manufacturing and trading is done mostly in towns. Here is a picture of a street in the city of Chicago. In the middle of the street is shown the business of carrying. Within the stores on either side is the business of trade; goods of all kinds from every part of the world are being bought and sold. Other buildings contain offices. The street is thronged with people, and within the buildings are thousands of others all busy working for the things they or their families need.



A BUSY STREET.



THE CAPITOL, WASHINGTON.

LESSON 25.

Government.

Where many people are working at different kinds of business, disputes are likely to arise which need a settlement. Two or more may claim the same thing, or perhaps dishonest men may try to take by force, or to steal, that which they do not own. There may even be wicked men who would take life, if not prevented. As children at school need rules to govern them while there, so the people of a country need rules by which to settle disputes and to prevent wickedness and crime. Rules are also needed by which people may help each other, as in building roads and in having schools, post offices, etc.

Rules are established by people in order that fairness may be practiced by all men doing business. These rules are called

laws. There are laws for many things, even to the making of more laws. The making of laws and the enforcement of them is called **government.**

Savages and barbarous people have few rules and little or no government; half-civilized people have imperfect and often unfair government, while civilized people have that which is wisest, fairest, and best.

The people of a country, uniting and agreeing together in making laws and living under them, is called a **nation.** Each nation has a city where the laws are made. It is called the capital.

Sometimes disagreements arise between different nations, and each tries to obtain what it wants, by force. When this occurs, war results. Our nation has had some wars with others. Perhaps your teacher will tell you the story of them, and how our nation has been victorious in all of them.

LESSON 26.

Maps.

A map is a drawing in which certain marks or colors stand for certain parts of, or things on, the earth's surface. It is not necessary that the marks or colors shall look like the things they stand for. But it is necessary that those marks and colors shall be placed in the right direction from each other, and at the right distances in the drawing, to show correctly the direction and distance between the things in the real country they represent.

In a map the marks show where things are, but not what they look like. Turn to the one on page 66. That is a map of North America, the body of land on which we live. The blue that surrounds it does not look like water, but it means that all around the land body is water. The crooked line at the edge of the blue stands for the coast. The red, and green, and yellow do not look like land, but they mean that all they cover represents land. The little, crooked, inside lines do not look like rivers, but they mean that rivers are there.

Just as a small picture may represent a large house, so a small map may represent a large country. An inch on a map may stand for hundreds of miles of real country. In the map on page 66 an inch represents about 700 miles.

The red color on the map represents the United States, our country. The yellow represents a country called British America. Which do you think is the larger? The red and yellow colors join each other

on the map. This shows that the two countries lie side by side. Point to marks which stand for mountains; some which stand for rivers. Notice that the river marks are light at first and become heavier. This shows that the rivers grow larger. You notice how some river marks join other river marks; this shows that some real streams join other streams. You notice that river marks extend to the blue, which stands for the ocean; this shows where rivers empty their water into the sea.

Observe the lines which run up and down the page, over the map. These are

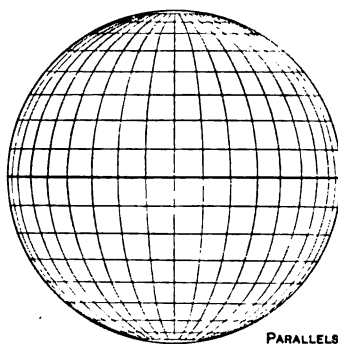
north-south direction lines, and are known as **meridians**. Those running across the page, over the map, are west-east direction lines, and are called **parallels**.

Try to make a map of the school-

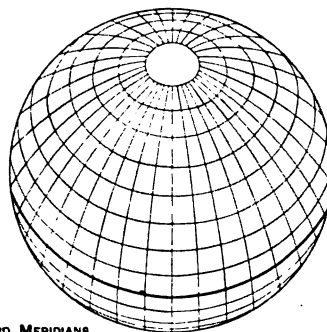
house and yard. First, learn which direction is north-south, and let the bottom of your paper stand for south. Now make a wide mark through the middle of the sheet to represent the street or road. If that road runs north-south, which way on the page will you make the mark? Which way, if it runs west-east?

If other roads cross the main road near the school-house, make marks to represent them. Make a little square to represent the school-house, placing it near to, or far from, the road. Now make some marks to represent the fence around the school yard. If there are trees in the yard, make marks in your map to show where they are.

A globe is a ball or sphere covered by a map. The above diagrams show how the parallels and meridians are arranged on a globe.



PARALLELS AND MERIDIANS.



LESSON 27.

The Western Continent.



Below is a picture of the earth as it would appear if viewed from a great height in the sky. Though they

can not be seen, the north pole is

at the top, the south pole

at the bottom, and the

equator across the

middle. The West-

ern Continent is

toward us, rising

from out of the

smooth water,

like a great

and irregular

mound with

an uneven sur-

face. You no-

tice that the

continent is in

two great parts,

as we said in Les-

son 15, and that

one of them is north

of the equator. That

part is called the Grand

Division of North America.

The other part which lies across

the equator is called the Grand Division

of South America. The little mounds which

rise out of the water are islands.

Remembering what a peninsula is, tell how many you can find in this picture. Point to them. How many islands can you see? Point to them. How many bays? Point to each. Look for the longest strip of high mountainous country in South America. Notice that it follows the isthmus and extends into North America, where it broadens out so as to be much wider

than it is in South America, and that it extends northward over the globe and out of sight. Do you see that the tops of some of the mountain-peaks are white? This is because there is snow on them.

Look at the diagram on page 33, and tell what you think the climate is in those parts of South America which are not very far from the equator, and what you think

the climate must be in that part of

North America which is

nearest to the equator.

What kind of weather

do you think the

people have in the

northern part of

North America?

If you should

travel through

South America

going toward

the south pole,

from the equator, would you

dress in thick

clothes when you

started, or in thin

clothes? For what

reason? Would you

find at first large trees

and many varieties of

plants growing freely, or

stunted trees and but few other

plants? Why? After you had gone one-

third of the distance to the south pole,

would you find the climate to be warmer

or colder than where you started? Why?

Would you see the same kinds of plants

and animals? Why? Would you wear

thicker or thinner clothes? Why? When

you had gone as far south as to the end

of the Grand Division, what climate would

you find?

There are other mountains in South

America and North America than those



of the strip mentioned. Can you see the wide valleys that lie between the ranges? Imagine the water that falls from the clouds on these mountains and their slopes draining down into the valleys and finally reaching the ocean.

The great ocean is separated by the continents into parts, each of which is called an ocean. That which lies east of America is called the Atlantic Ocean. Beyond it lies the Eastern Continent. From it came the white men who discovered America. In what direction must they have sailed? All the white people who came to America to live, after it was discovered, came across this ocean. That great part of the ocean which lies west of America is called the Pacific Ocean. Beyond it lies the same Eastern Continent that lies on the other side of the Atlantic Ocean. When men cross the Atlantic eastward they reach

one edge of that continent, and when they cross the Pacific westward they reach the other edge of the same continent.

North of North America, where we can not see it in this picture, is a small ocean called the Arctic Ocean. Within this is the point we call the north pole. South of South America is the Antarctic Ocean.

Those high mountains of North America, which you see in the picture, are in the United States, our country. Suppose a ship should sail from our Atlantic Coast around to our Pacific Coast, let us see where

she would go. If it were not for the isthmus which joins the two Americas, she could go around the south end of North America. As it is, she must go south in the Atlantic Ocean, across the torrid zone, along the east coast and around the southern point of South America, northward along the western coast, across the torrid zone again, and along the coast of North America, until she reaches the western coast of the United States. Trace upon the picture the course she would follow.

You may ask why she would not sail around the northern part of North America, which is not as far; but, if you think about it, you will remember that it is very cold in that region near the north pole, and that the ice would stop her. It is so cold in the Arctic Ocean that few voyagers have ever attempted to cross it.

It is cold at the south end of South America, but not so as to freeze the sea

or to fill it with dangerous icebergs. Toward the north pole the land of the American Continent lies mainly low and is very wide. Toward the south pole the land is narrow and much of it consists of the mountain system which here ends.

Along the west coast of the continent, the mountains are so near the sea that there is but little land level enough for farming. A little way back they rise so high in South America, that only the great condor, the largest bird that flies, can reach their summits.



THE GREAT CONDOR.

LESSON 28.

The Atlantic Ocean.

Here is a picture of the earth turned on its axis far enough from its former position to bring the Atlantic Ocean into view.

In this picture we see the eastern part of the Western Continent, and the western part of the Eastern Continent, with the ocean lying between them. While

the equator is not indicated in the pictures, you must remember it reaches across the middle of each of them.

Hence it passes across that portion of the Eastern Continent called **Africa**, the home of the black race.

Africa forms a grand division.

The northern part of the Eastern Continent, as

we see it here, is called **Europe**. It is inhabited by the white race, and is a grand division.

It was from Europe that the first white people came to America.

On **maps** the names of the continents, oceans, etc., are generally printed, but not in **pictures**. After having learnt what the latter represent, you should be able to give, from memory, the names of the parts shown in them. Point to the Atlantic Ocean, South America, Europe, Africa.

Mention a reason why the water in the Atlantic Ocean should be warmer, between South America and Africa, than it is either north or south of there.

Many of the white people in Europe,

and in North and South America, visit their friends who live on the opposite sides of the Atlantic, and the people, on either side, exchange the goods they produce. All this visiting, and carrying of goods, is done by means of ships; consequently, many ships are passing, at all times, upon the Atlantic Ocean. There are more of them upon that ocean than any other. Some are sailing

ships, which have high poles, called masts. These hold up great

sheets of cloth, called sails, against which the

wind blows and pushes the ships

forward. Others

have no sails, but are pushed

along by great wheels, which

move in the water, these

wheels being made to turn by

steam engines.

Some steamships cross the ocean

in a week, but sailing vessels require a

much longer time.

Frequently the people on a ship, when sailing between

Europe and the United States, see

icebergs. These are also very common in the ocean near the southern part of South America. The latter come from the south

frigid zone, and are floating northward. But icebergs are never seen in the narrow part

of the ocean between Africa and South America, near the equator. Flitting along

the choppy sea are also seen little birds, not much larger than swallows—stormy

petrels or Mother Cary's chickens, the sailors call them. They seem to hop from

wave to wave, with outspread wings, giving





STORMY PETREL.

each a little flirt with their feet as they pass it. They are favorites with sea-faring men, who will never allow them to be harmed.

None of the animals that lived on either side of the ocean ever reached the other side until they were carried by man in ships, except some kinds of birds.

You may observe that there are but few islands in the Atlantic Ocean, and most of those that are there are near to continents. Generally they are the tops of mountains which rise from the rock surface beneath the water, and extend upward far enough to reach above the surface.

Observe that there is a great portion of the Atlantic which extends westward between North and South America. The end of it is a great gulf partly inclosed by two peninsulas. This is the Gulf of Mexico. Near this gulf there is a portion of the ocean which seems to be walled in by long islands and rows of smaller islands. It is a sea; that is, it is a portion of the ocean, partly inclosed by land bodies. It is the Caribbean Sea. This is the only sea of the Atlantic which is plainly in view in this picture, though there are others in and near Europe, which will be shown in another picture. The row of islands that incloses this sea is a chain of mountains with all but its highest parts covered by water. The bottoms of the gulf and sea would be great valleys, if the water were not there. Find the gulf and the sea in the picture.

You can see by this picture how much more of the rock surface of this side of

the earth is covered by water than is bare. Think of the north pole as at the top of the picture, and consider the shape of the Atlantic Ocean. You can close your eyes and see in your mind by memory the slope of South America. Look carefully at the Atlantic Ocean as shown in this picture and then close your eyes and try to see it. Where is it narrowest? Which part is larger, that in the north or that in the south?

The southern part of the Atlantic is not crossed by so many ships as the northern part because there are not many people living in the countries on its opposite sides. From the thickly peopled countries in the north, vessels sail south through the narrow part of the ocean to ports in South America and Africa, and back again, bringing the products of the north and carrying back those of the south.

As you look at this picture of the earth, think of it as turning on its axis as a top spins. It turns toward the right. You see Africa going out of view.



OCEAN STEAMER.

LESSON 29.

The Western Part of the Eastern Continent.

In this picture the earth has turned still more on its axis, so as to show a portion of the Eastern Continent.

That large body of land in the middle of the picture is the Grand Division of Africa. Observe that it is almost

surrounded by water, there

being only one little connecting strip, or isthmus, which joins it

to the rest of the continent. The

ocean upon the

west you know to be the Atlantic, but the

one upon the

east is new to you; it is

the **Indian**

Ocean. North

from Africa lies

Europe, and be-

tween Africa and

Europe is a sea called

the **Mediterranean**

Sea. The word means

"between the lands." This

sea lies in a great deep valley be-

tween the mountains of Africa and those

of Europe. The mountains of the two

grand divisions approach each other very

closely at one place, but between them

is a narrow passage, which connects the

sea with the ocean. This passage is called

the **Strait of Gibraltar.** At the other

end of the sea is the **Isthmus of Suez.**

That long narrow sea which almost meets

the Mediterranean at the Isthmus of Suez

is called the **Red Sea.** It is the same Red

Sea that is spoken of in the Bible. Some



of the countries which first advanced beyond barbarism, of which we have any record, were those bordering the Mediterranean Sea.

For hundreds of years the sailors inhabiting the countries which border on the Atlantic, who sailed their ships to the Indian Ocean, had to pass around the southern end of Africa. But, at length, a canal was

dug across the Isthmus of Suez,

so as to join the Mediter-

anean and Red seas, and

now vessels passing be-

tween the Atlantic

and Indian oceans

pass through the

Strait of Gib-

raltar, the Med-

iterranean Sea

and the Suez

Canal. There-

by they avoid

the long trip

around Afri-

ca. There are

not very many

islands near Af-

rica, though there

is one large one. It

lies near the eastern

coast, south of the equa-

tor, and is a mountainous

chain rising from the bed of the

sea. Between it and the mainland is a long valley, filled by the water of the ocean.

The mountains of Africa, you may notice, do not lie in long ranges like those of the two Americas, but are scattered and irregular. Most of them are in the northern and eastern parts. Some are so high as to be capped by snow. There are great valleys between the mountains, some wide and some narrow. Down these flow many rivers, through which the drainage reaches the ocean.

The torrid zone, which crosses South America, extends across the Atlantic Ocean and Africa, and the equator is its central line. If you were to draw a line in this position to indicate the equator, where would you put it?

Greater quantities of rain fall in the torrid zone than in any of the other zones, and this water, both in South America and Africa, causes many rivers to flow from the mountains. Some of the greatest rivers in the world are in the torrid zone parts of South America and Africa.

As the red race is native to North and South America, so the black race is native to Africa, especially to the torrid zone part. But in the northern part, on a strip along the Mediterranean Sea, a portion of the white race is also found. The people are darker in complexion than Europeans and are called Arabs.

The north pole, in the picture, is at the top beyond the farthest land that is shown. That land which lies north of the Mediterranean Sea and upon the left, or west, of the range of mountains which seems to run toward the north pole, is Europe. Here dwells



SUEZ CANAL.



CANAL AT PORT SAID.

the white race, which is much lighter in color than the same race in other parts of the world, except in America.

To the right in the picture, or east from Europe, is seen Asia, which reaches a long distance on the other side of the earth. In this picture the highest mountains

are in Asia, and many of them are always covered with snow.

You may notice in the view that the mountains are different from those found in America. They do not run in such long rows. They are mostly broken up into groups or short ranges.



AN ARAB.



A NEGRO.

LESSON 30.

The Indian Ocean.

Here is a picture of the earth when turned still further on its axis, so as to show the **Indian Ocean**. Upon the west this ocean washes the shore of Africa. On the north it borders **Asia**, which, with its islands, is a grand division, and which covers about half of the Eastern Continent. Eastward lie a multitude of islands and the Continent of **Australia**. The equator crosses the Indian Ocean, which shows that much of its water is within the torrid zone. This ocean lies on the earth opposite to our country. Asia extends from this ocean northward, and reaches, for some distance, into the frigid zone. That portion of Asia which we can see in this picture is very mountainous, and here are the highest mountains on the earth. You may observe that many of them are snow-capped. The warm, damp winds of the torrid zone are cooled, as they glide up the slopes of these mountains, and drop their moisture, as rain, which furnishes the water of some great rivers which flow into the Indian Ocean. The rains do not fall throughout the year, but during what is called the wet season. While the dry season lasts the waters of the rivers come from melting snows on the higher parts of the mountains.



From the group of very high mountains which you see here, ridges extend westward into Europe, and southward into Africa, and northeasterly toward North America. Mountains also extend southeasterly into the sea, from which their peaks arise, as islands, in the great group east of the Indian Ocean.

In that part of Asia which lies south of the snow-capped mountains, and westward to Africa and Europe, are found people of the white race. They are not so white as those who dwell in Europe and in America, but they are neither black, nor brown, nor yellow. Their color is much like that of the white people of our country, when very darkly tanned by the sun. Those living to the south of the mountains are called **Hindoos**. In the greater part of Asia dwell people of the yellow race. They are lighter in color than Asiatic people of the white race, but, owing to the peculiar color of their skins, they are called the yellow race.

The Indian Ocean is smaller than the Atlantic or Pacific. It is separated from the Pacific by the small continent Australia, and the chains of islands which you see on the right. Vessels which cross this ocean are mainly from Europe. They come through the Suez Canal and they visit the ports along the coast of Asia, and the islands which are shown, and Australia.

LESSON 31.

Asia and Australia.

Here is a picture of the earth turned still further, showing the eastern part of the Eastern Continent, together with the Continent of Australia, and the great group of islands lying between, sometimes called the East Indies. You can see, in the picture, how the mountains of Asia seem to extend far out into the sea, and that their ridges and summits form peninsulas, rows of islands and single islands. Some people consider that Australia, the continent in the south, was once separated from Asia by only a narrow strait, and all that great area studded with islands was solid land, forming a part of Asia. They say that this great country was covered by high mountains, but that it at length sank, so that the waters covered all of its valleys, leaving the high parts of the mountains as islands. A few years ago a large part of one of these islands sank out of sight, and most of its inhabitants lost their lives.

As you look along the coast of Asia, toward the north, you may see some mountain chains which rise above the ocean level, forming numerous islands. Only the larger ones are shown here. The ocean to the left, or west, in this picture is the Indian Ocean; that upon the right, or east,

is the Pacific. The group of islands and a part of Australia are in the torrid zone. The Japanese islands and most of Asia lie in the north temperate zone.

You remember how the Caribbean Sea, shown in the first picture, is inclosed by rows of islands, and by looking along the eastern coast of Asia you will see several parts of the ocean inclosed in the same

way. These are seas. You will learn their names in future lessons. You may notice, also, that Asia has many peninsulas.

Most of the peninsulas, all over the world, are simply mountain chains extending into the sea, like those shown in the picture. Australia is a continent, because it is one of the three great bodies of upraised rock upon the surface of the earth. It lies on the earth directly opposite to the northern part of

the Atlantic Ocean. It has many mountain ranges, extending near the coast, and also some in the interior. They are not so high as those in the other two continents.

The native people are black, very much like those of Africa. Many white people live there now. In most of the islands that lie between Australia and Asia, and on the peninsula which extends from Asia southward among those islands, dwells the brown race. It resembles the yellow race more than any other.



LESSON 32.

The Pacific Ocean.

A picture of the globe, when it has been turned still further, shows the great **Pacific Ocean**.

In the first picture, our continent appeared with the Pacific Ocean on the west of it. In this, the continent appears upon the east of the ocean. This view shows that the Pacific Ocean covers nearly half of the earth, and throughout most of its expanse contains no land, excepting some small islands. It lies on the earth directly opposite to Africa, and ships might sail upon it for thousands of miles, along a straight course, without coming in sight of land. On its eastern side, its waters wash the shore of America, and on the western they reach the shore of Asia. The bottom of the Pacific may be thought of as the greatest plain of the earth, and as lying so low as to be covered by a bed of water which in some places is as much as five miles in depth.

Most of the islands in this ocean have been formed in one of two ways. One way is by volcanic action. Some of the rock of the interior is so hot that it is melted. Sometimes this melted rock, which is called **lava**, breaks through that hard rock, which forms the crust of the earth like the shell

of an egg, and flows out upon the surface, where it cools, and, with the unmelted rock which comes with it, forms mountains. This happens both where the surface is dry, as land, and where it is covered by water, as the sea. Many of our land mountains have been formed in this way. The place where the lava comes forth is called a volcano, and a mountain which has been made by

the piling up of material thus sent forth from the earth, is also known as a volcano.

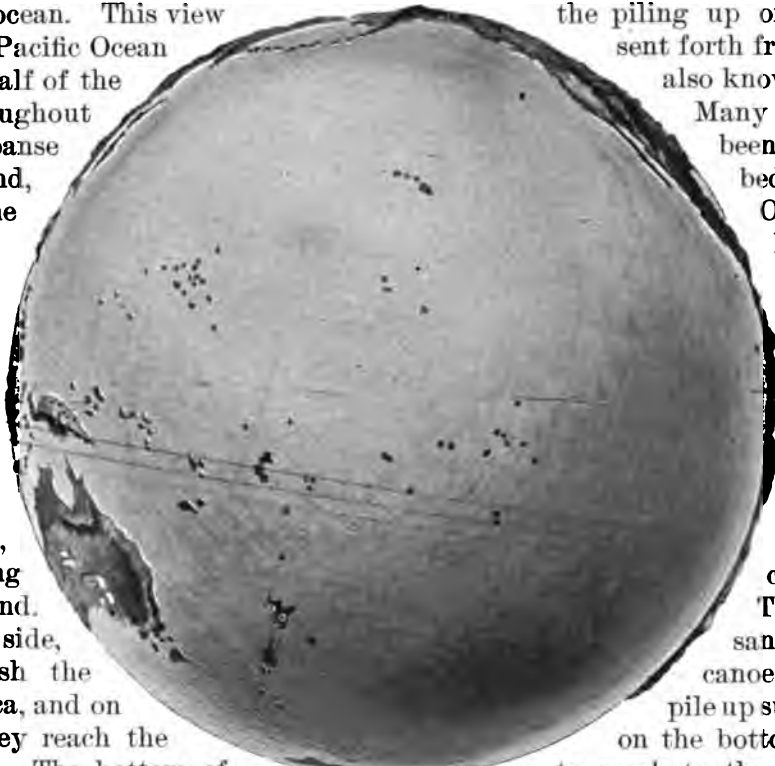
Many volcanoes have been formed in the bed of the Pacific.

Of these a very large number have reached the surface, so that their tops form islands. Most of them have long ago discontinued throwing forth lava, but some continue to do so.

There are thousands of these volcanoes which did not pile up sufficient material on the bottom of the ocean

to reach to the surface of the water, so they did not become islands. No doubt many of these piles are sailed over by vessels crossing the ocean.

But in many cases they reach nearly to the surface, and on them a strange thing takes place. In the water of the warm parts of the ocean, within or near to the torrid zone, lives a little jelly-like animal, as small as an insect, which is called the **coral polyp**. There are countless millions of them. They take up the lime which is dissolved in the sea-water, just as salt is, and with it they





A VOLCANO IN ACTION.

make their homes. Thousands of them working together make a branch-like piece of limy material, which resembles stone. It is called **coral** and most of it is white. They build very slowly, but there are so many of them that the coral they make is very large in amount. As they die, others go on with their work. They build upon the tops of these volcano heaps, for they can live only where the water is not very deep. Year after year they pile up this coral rock, until at length it reaches the surface and forms an island. The wind, rain, and the waves break and grind the rock upon the surface until it becomes soil; the birds bring seeds, cocoanut trees spring up and grow, and, at last men come there to dwell. Such islands are called coral islands. There are thousands

of these islands in the Pacific Ocean. Except those large ones near Asia, the islands of the Pacific, all joined together, would not make a body of land large enough to be considered a continent. Most of them were not discovered until long after America had become known. Those people who



A VOLCANIC MOUNTAIN.

dwelt upon them, when they were first visited by civilized men, were of the brown race in some parts, and of the black race in others. They were savages, and upon many of the islands were cannibals; those who were in the habit of cooking and eating the flesh of their enemies or strangers when they could kill or capture them.

But people from nations of the white race have gone there to live among them, and missionaries have taught them better ways of living.



CORAL.

LESSON 33.

The North Polar Region.

We have examined the earth by viewing pictures of its different parts, as we can see them by looking from over the equator. In that way we can view those parts that lie midway between the poles, plainly, but the parts near the poles can not be seen so well. Now we look at a picture of the earth as it would appear if looked at from over the north pole. In looking at it we must think of the north pole as being exactly at the center of this picture. The northern land bodies show plainly, but the regions near the equator are not so well seen. Remembering that toward the north pole is north from all conceivable points on the earth's surface, try to think of men starting north from every island and every part of the continents. Imagine how they would all be drawing together, how they would be coming toward each other, and how, if they came far enough, they would all meet, face to face, at the center. All would be coming north. Then think of them as turning about and going back. No two of them would be traveling the same way, yet they would all be going south, for south is anywhere in a straight line from the north pole.

Think of where the south pole is, while the north pole is toward us. Think of

many north-south direction lines extending straight from the north pole to the south pole, and how they would go around half of the great earth in every way to get there.

As you look at this picture of the earth, think where the equator is. What direction is it around the outside of the picture to the left? To the right?

Where are the north frigid and the torrid zones in this picture? We can imagine men coming toward the north pole, but if they should try to reach it they could not do so, it is so terribly cold in that region. The small ocean that you see in the middle is the **Arctic Ocean**, and is at no time free from ice. It is very cold on all the shores which border that ocean, and on all of its islands. As the earth rotates, people living far away from the poles are each



day turned around with it, so that for a time the sun's rays can not reach them, and it is night with them during a part of every day. But here, near the poles, the people, turning with the earth, go in a ring around the pole, and do not get out of sight of the sun for months at a time. The sun, to them, seems to go around in a ring above the horizon. Then, when the earth's axis leans another way, there will be months at a time when the sun does not appear to those people at all.

You remember that in our picture of the Western Continent, we could see that part of North America which was near the equator, plainly, but not the part that was near to the north pole. In the picture on the preceding page we can see the part near the pole, but can not see well that part near the equator. North America is in the lower part, and the northern part of the Atlantic Ocean lies upon the right

you could not see plainly in the other pictures.

You can here see the mountains which we said extended toward North America from the high part of Asia. Notice that they seem to form one very long system running the entire length of Asia and North America. They are separated by a strait, which joins the Arctic Ocean to the Pacific. It looks as if a ship could sail from the



ON THE ARCTIC OCEAN SHORE.

of it. The icebergs, of which we spoke in another lesson, break off from great masses of ice, which form on the islands you see in and around the Arctic Ocean. They float through the bays and straits that you see, into the Atlantic and southward.

On the left is the great Pacific Ocean. Icebergs form along the shores of this ocean also, where they are nearest to the north pole.

The great continent in the upper part of this picture is the Eastern Continent, and you see the northern portion, which

northern part of the Pacific Ocean, through this strait and across the Arctic, into the northern part of the Atlantic. But no ship can pass on account of the ice. In order to get into the Atlantic from the Pacific, a vessel must go around the southern end of either the Eastern or Western Continent, or through the Suez Canal.

That part of the Eastern Continent seen on the left, where the mountains are, and the plain which lies north of them, is Europe. Most of the land of the earth lies north of the equator.

LESSON 34.

The South Polar Region.

Here is a view of the earth as it might appear from over the south pole. In looking at this picture you should think of the equator as passing around on the outside, and bear in mind that from any part of the picture straight toward the center is **south**. Away from the center in every direction is **north**.

South America is in the upper part of the picture. It extends over the roundness of the earth far out of sight. South America and all other lands are north from the south pole. In the lower part of the picture you can see a portion of Australia. Here, around the south pole, is the south frigid zone, where it is as cold as in the north frigid zone. No people at all live there, and there are scarcely any animals. No plants thrive in this barren region. There is a great body of land in the south frigid zone, but it has never been explored. A portion of the coast-line is shown in this picture, but no ships have ever visited the other parts of the coast of that land, and nothing is known of it. Many people believe that this body of land is a continent. It is called Antarctic Land.

Where it has been seen, it seems to be covered by a great bed of ice as high as a mountain. Many pieces of this ice break

off at the edge, and, falling into the water, float away as icebergs.

You may notice by this picture that nearly all of the earth's surface south of the equator is covered by water.

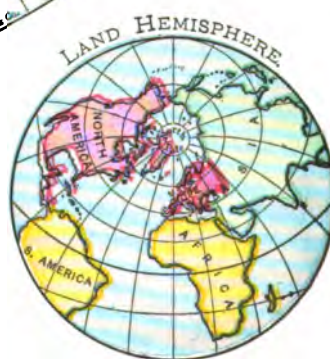
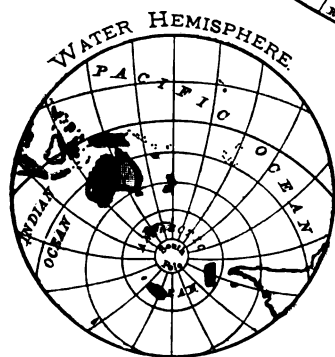
Around the south pole and Antarctic Land lies the Antarctic Ocean. That ocean is bounded all around by three others, the Pacific, Atlantic, and Indian.

Vessels have sailed along the coast of this unknown continent for hundreds of miles, without finding a place to land. Instead of a low and sandy, or even high and rocky, shore, long unbroken cliffs of ice were found, several times higher than their highest masts. No rivers reached to the ocean from this frozen land. The drainage from it came as ice, which from time to time breaks off from the cliffs and floats away. Beyond the great ice-cliffs the sailors could see lofty mountains, one of which was a volcano, sending forth smoke and fire.

But few animals have been seen in the Antarctic Ocean. These include whales, penguins, and a few kinds of fish. A short distance within this ocean was found a plant which resembles a lichen. This is the farthest south that plant life has been found. Many vessels sail the Antarctic Ocean in search of the sperm whale, for sperm oil, and other whales for whale-bone, etc.







LESSON 35.

Maps of the Hemispheres.

Each of the pictures of the earth that we have seen shows one-half of it, and might be called a picture of a hemisphere. On pages 60 and 61 are **maps** of the hemispheres. The one on the left is the Western Hemisphere, and shows the Western Continent; and that one on the right is the Eastern Hemisphere, and shows the Eastern Continent and the Continent of Australia. Which of the

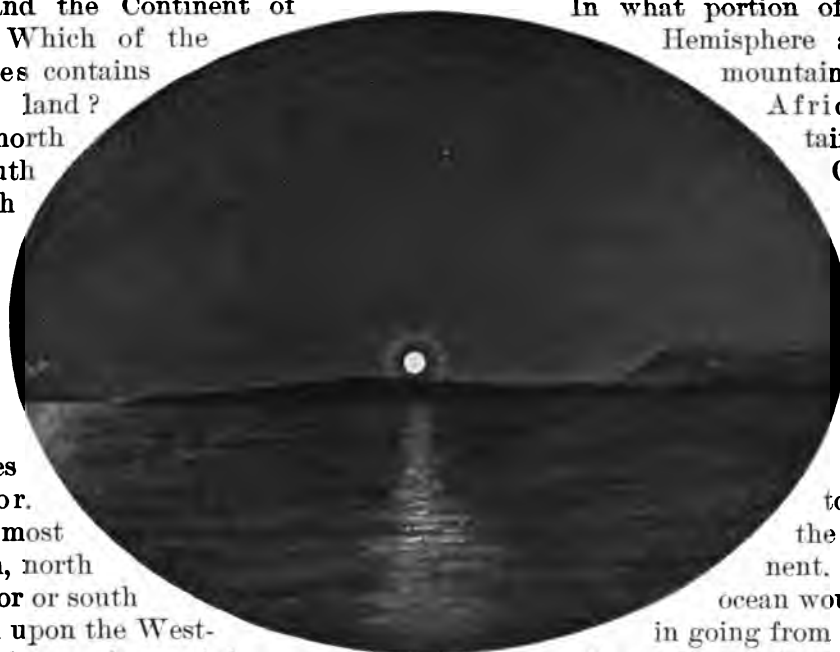
hemispheres contains the most land?

Find the north and the south poles in each hemisphere.

Count the meridians and parallels in each and find in each the line that indicates the equator.

Where is the most land in each, north of the equator or south of it? Find upon the West-

ern Hemisphere where Asia extends over from the Eastern one. We spoke of grand divisions in some of the lessons. Here they may be seen all at once. They are shown in colors. Name the two in the Western Hemisphere; the four in the Eastern one. You notice that some islands are colored green, like Asia. Their color shows that they are a part of the Grand Division of Asia. The orange-colored ones are a part of the Grand Division of Australia. The colors on these maps are used merely to show the size and shape of the grand divisions. The land itself has no such



colors. Find on these maps islands which form a part of the Grand Division of Africa; Europe; North America; South America. Which ocean lies east of the Continent of America? West? Where is the Arctic Ocean? The Antarctic? The Indian? Which continent lies south of the equator? What two continents are crossed by the equator? Which of these has the more irregular coast-line—North America or South America? Asia or Africa? Europe or Australia?

In what portion of the Western Hemisphere are the most mountains found? Is

Africa as mountainous as Asia?

Count all the large islands in both of

the maps; also all the bays and gulfs. Find

where Africa is joined

by an isthmus to the rest of

the Eastern Continent. Across what

ocean would a ship sail

in going from Africa to Australia?

Count the rivers in North America; South America; Europe; Asia; Africa; Australia. Notice that some of

these have other rivers flowing into them. In what direction is Europe from Africa?

The earth might be divided at the equator into hemispheres, which would be called northern and southern. Near the poles the sun, during half the year, would not rise and set, but go around the horizon. At noon it is highest in the sky, and at midnight lowest. The picture shows how the sun appears at midnight, during this period in the polar regions.

LESSON 36.

North America.

We will now learn about each of the grand divisions, one after another; and



BRITISH AMERICA.

will have, with each, a picture and a map. We take North America first, because it is the one in which we live.

On the following page is a picture of North America. It is as though a photograph were taken of it, from a great height in the sky.

Think of the blue as the ocean. Once the ocean covered all the surface, and where North America now is nothing appeared but water. What is the land at present was then the bottom of the sea. But, in the course of time, the bottom was pushed up, here a little and there a little, and then more, and again more, until, after thousands of years, this whole great extent of rock stood higher than the water, and became land, nearly all of which is covered now with fine earth material.

Some parts of the land body are higher than others. The dark portions in the pic-

ture represent the high parts, and the light portions the low ones. The light parts between the dark parts are valleys, and the dark parts between the light ones are mountains and highlands. The darker the shade, the higher is the land; a lighter shade means lower land.

Ask your teacher to make a dot on the picture to show where you live. Is it very high, or very low, or medium high where you live? Is it near the ocean, or far from it? If you should travel from home to the seashore, would you be going downhill, or uphill and then down?

Notice the parallels and meridians. They show you which way, in the picture, north,

south, east, or west is. The meridians point to where the north pole is, at the top, and they are supposed to go on far beyond the bottom of the page to the south pole. As you may observe, the parallels cross the others.

Which way is North

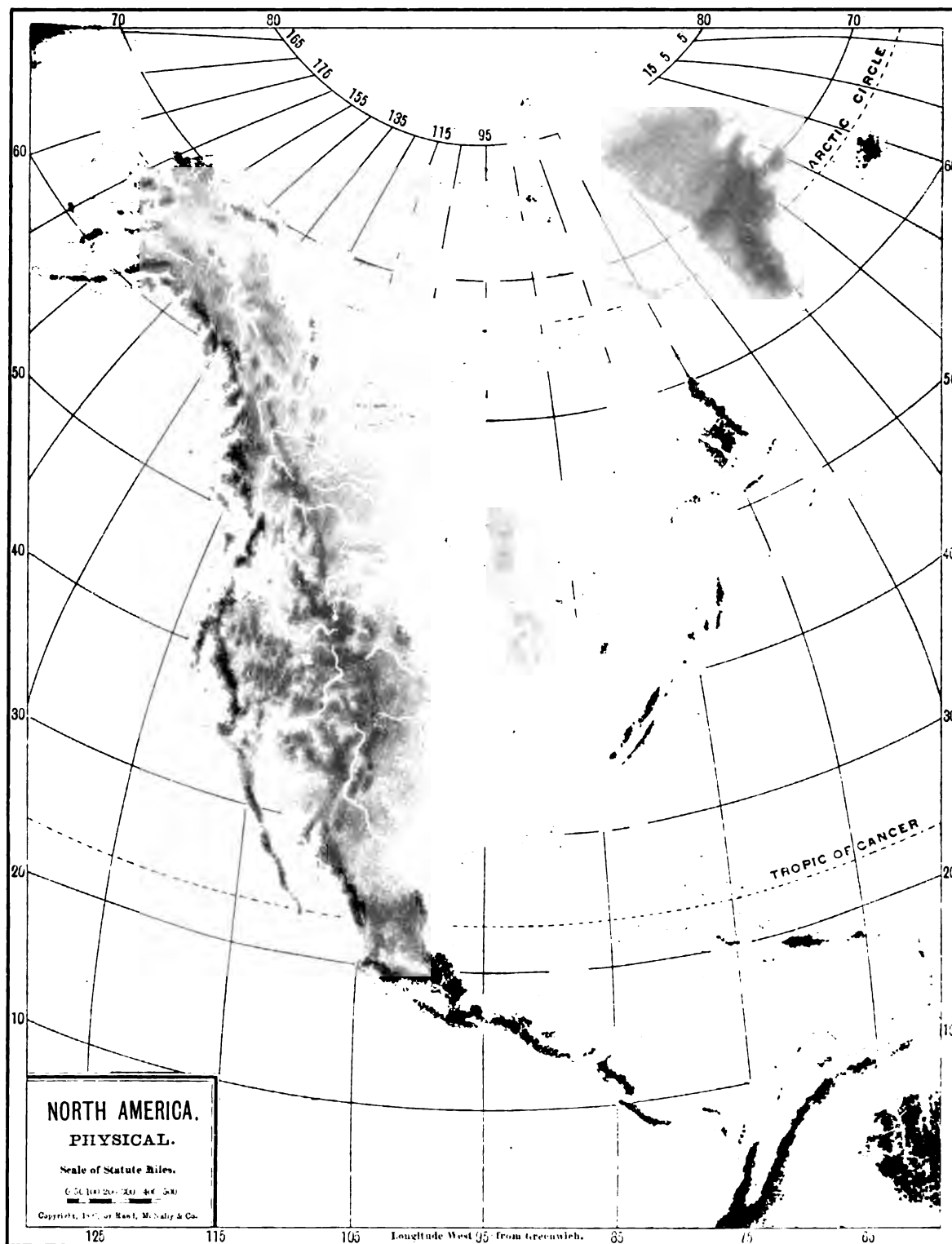


UNITED STATES.



MEXICO.

America the longer, west-east or north-south? Which coast has the more bays, gulfs, sounds, peninsulas, and capes, the eastern or western? On what coast are



there many large islands? Do the inhabitants of the northern portion wear thick or thin clothing? Why? Do you think they have many vegetables, and fruits, and flowers? Why?

Notice that nearly one-third of the surface in the western part consists of highland, covered with mountains and valleys. Observe how the highest part of this strip forms a narrow ridge, which winds from the northwestern portion throughout the whole length of the Grand Division, even through the narrow part at the south, into the Grand Division of South America, a small part of which is shown in the lower right hand corner of the page.

Notice also that there is a strip of highland in the eastern part which is not so high as that in the west. It begins at the northeastern coast, and vanishes before reaching the southern coast. Now look for the great valley which lies between these two highlands. Where is it widest? Where is it narrowest? Where does it seem to be lowest?

Now let us consider the rain that falls upon North America, and what becomes of the water.

That which falls upon the western mountains begins at once to flow down the slopes. It forms rivers, upon the western side of the ridge, which flow into the Pacific Ocean. Find some of those rivers in this picture.

On the eastern side of the divide, the water in flowing down the slope forms rivers which flow eastward in the great valley. Find them in the picture. Find those rivers which carry the drainage from the eastern highland into the valley. Find a great river in this valley into which flow some drainage rivers of both highlands.

There are several bodies of water in the great valley which are surrounded by land.

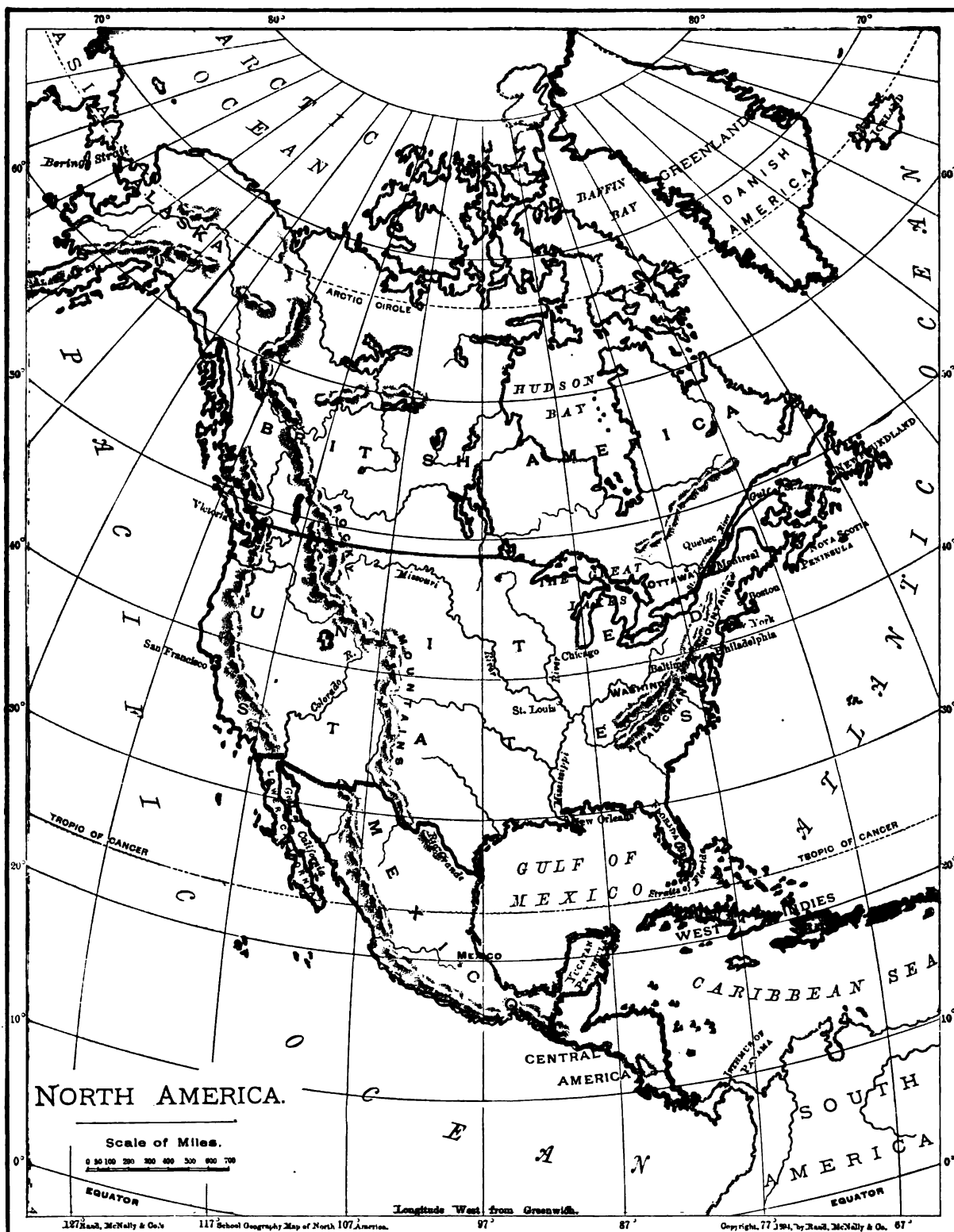
You can find them, colored blue, in the picture. These are **lakes**. Rivers, which are not shown in the picture, flow into the lakes, bearing water which falls upon the slopes around them. The large body of water in the north is not a lake, for, as you see, it is not surrounded



A GROUP OF NORTH AMERICAN INDIAN CHIEFS.

by land. It is an arm of the ocean, and is a great bay.

With the **picture** of North America is a **map** of the same; the map is to show where its parts are, and to give their names. Try, now, to find in the picture the things which are named in the map. Find Greenland. Is it connected to the mainland, or is it an island? What do you see along its coast? Is it a cold country? Why do you think so? What is the wide strip of water called which separates it from the mainland? What is the name of the ocean on the east of the mainland? What is the great body of water west of Baffin Bay called?



What is the name of the great, rounded gulf which lies at the south? There are two peninsulas here, one pointing south and the other north.

What are the mountains in the west called? Those in the east? In what part are they the highest? What is the main river in the great valley called? What is its greatest branch called?

The great valley is so nearly level over most of its surface that it is called a plain. As it lies in the middle, or central, part of the Grand Division, it is called the **Great Central Plain**. If you notice how far the Mississippi River and its branches



YOUNG DEER.

extend, you will see that these rivers drain nearly all the southern half of that plain. That part which is thus drained is called the Mississippi Basin.

Into what great bay and what oceans does the drainage of the northern part of the Great Central Plain

flow? What is that group of lakes in the Great Central Plain called?

The rivers shown in this picture do not all flow alike. In some the water moves much faster than it does in others. In a short river which leads from one of the Great Lakes to another, there is a place where all the water falls over the edge of high rocks into a gorge below, 150 feet deep. The place is called **Niagara Falls**.

The land in which the people of a nation dwell is called a country. If we could look down from the sky and see North America,



NIAGARA FALLS.

there would be nothing in what we could see to tell us what part is our country, the United States, what Mexico, or what British America. So in our picture we do not show where these countries extend. We can show it in a map, however, by means of colors. The red color shows the United States, the yellow British America, and the green Mexico. Notice that the middle part, that which is neither the hottest nor the coldest, is our country, the **United States**. The red part, called Alaska, belongs to our nation, but it is so near to the frigid zone that it is too cold to be a good country to live in.



SCENE IN MEXICO.

LESSON 37.

The United States.

We will give you a picture and map of each of the grand divisions of land upon the earth, as we did with North America ; but before doing so, we will present a map of **our own country.**

Most of the people who came at an early day to live in that part of North America which our nation possesses, were from a country in Europe called England, and a large part of our people are descended from those English immigrants ; so the English language is the language of this nation. As a rule, each nation of the Old World has its own language, while each one of the New World uses the language of the European nation from which its people came.



THE OZARK COUNTRY, MISSOURI.

Our country is called the United States, because in the beginning several States or colonies united to make a nation. These had been governed by the English, but they rebelled against that nation, and in the war which followed were victorious ; so

they became a nation themselves. At first the country of the United States was small, but more and more has been added from



ST. CROIX RIVER, MINNESOTA.

time to time. Now it reaches across the Grand Division, from ocean to ocean, and also includes Alaska.

Look at the map on page 66, and see how great a portion of North America is covered by our country.

As the United States has grown in area, many people from countries in Europe have come to it to live. Germans have come from Germany, Frenchmen from France, Swedes from Sweden, Norwegians from Norway, Italians from Italy, and others from other countries. In Europe these people spoke their native language, but, after coming here, most of them soon learned to speak English, and their children have grown up speaking it, so that now more people in our country speak English than in England, the home of the language. English is spoken throughout the world more than any other tongue.



PASSAIC FALLS, N. J.

It is now about 120 years since our country became a nation, but there are nations in the Old World many hundreds of years old.

Our government is different from those of most of the Old World countries. Nearly all of them have rulers called kings, emperors, etc., who rule over the people. These different rulers are called monarchs, and the nations they govern are called **monarchies**. They are not chosen by the people, but when one dies his son generally takes his place, and so the government remains in one family, known as the ruling family. There is a body of men called nobles, in most monarchies, who assist in governing the people. In the United States, however, the people united in establishing a government

by which the people rule themselves. From time to time, since then, other nations have established governments like ours. Such nations are called **republics**. The nations of the New World are all republics, while most of those in the Old World are monarchies.

We elect men to make such laws for us as we wish to have. They are called **Senators** and **Representatives**, and we elect a man to see that the laws which these men make are enforced. He is called the **President**. We also have judges to settle disputes, according to the laws that are made. The city of Washington is the capital of the United States. It contains

the White House, the home of the President. Since our nation was formed, new States have been made from time to time, until the number has grown from thirteen, at first, to forty-five at the present time. Each State has a government of its own, much like that of the nation, and each State has its own capital. That officer who attends to the enforcement of the laws of a State is called the **Governor**.

We have four Territories. A Territory is like a State, except that it does not have a government of its own, being ruled by the

United States Government. These territories will all become States when there are more people living within them. There are more than twenty times as many people living in our country now as there were when it became



THE WHITE HOUSE.

a nation. Most of the country lying north of ours belongs to England. It is called Canada. The Great Lakes, and the river through which their water goes to the sea, form a portion of the boundary between the two countries. Find these lakes and that river on the map. Memorize the names of the four boundary lakes and the river, beginning at the west. Which one of the Great Lakes is not a part of the boundary?

Notice on the map a dotted line running west-east from near the Great Lakes to the Pacific Ocean. This goes straight across plains, mountains, and valleys, and separates our country from Canada. Posts are set along the line to show where it is.



A TOBACCO FIELD.

The boundary between the United States and Mexico is formed partly by a river. Find it on the map. What is its name? Nearly half of the boundary consists of lines. Find them. Find, on the map, where some of the States are separated by rivers; by lines. In all parts of the world countries which adjoin each other are separated by boundaries like those of the United States.

Find parallel 45°; trace it across the map. That line is just half-way between the equator and the north pole. What should the climate be along it? Find parallel 30°. What should the climate be along that line? In the winter time, when the snow lies deep in States crossed by parallel 45°, flowers are blooming and oranges are ripening in those crossed by parallel 30°.

Where is the Gulf of Mexico? Do you think the boys ever go skating in the States that border on it? Why? Would you think that alligators and other warm climate



AN ALLIGATOR.

animals would be found there? Should Mexico be warmer or colder than the United States? Why?

Which country in North America is the largest? As regards climate, which country is best situated? Why should farm products grow better in that part of the Great Plain which is drained by the Mississippi River and its branches, than in that part which is drained by the rivers which flow northward? In what country is the Mississippi Basin? Name the mountains which lie east of it. Those on the west.

The rainstorms of the United States come mostly from the northwest corner. They sweep eastward over the Great Lakes, and out into the Atlantic Ocean at the northeast corner. Sometimes it takes a



A CORNFIELD.

week for one of these storms to travel across the country. Find on the map of the United States the rivers which carry the water of these rains to the Gulf of Mexico; to the Pacific Ocean; to the Atlantic Ocean. The Missouri, Yellowstone, and Snake rivers rise very near together in the mountains. If a chip were thrown into the Missouri here, in what different directions would it float, and into what ocean would it go? If it were thrown into the Snake River?

LESSON 38.

The United States—Continued.

You should know that no common map shows all the streams. In the map of the United States there are shown rivers which do not appear in the small map of North America, and the maps of the separate States will show some that do not appear on the map of the United States. The same is true of cities and towns. The larger the map the more rivers, cities, and towns shown. Find the State of Maine on the map. It shows here no rivers or lakes, and but two cities. On page 86 is a map which gives Maine on a much larger scale, so that more cities and some rivers and lakes are shown, and if a larger map could be given, many more would appear upon it. When you look at a map, remember that it does not indicate all the features of the country, and try to imagine the many hills, valleys, streams, villages, and roads which can not be shown on it for want of room. Find the Rocky Mountains on the map. Notice that several rivers rise among them and flow eastward, most of them joining the Mississippi. There are a few of these at the south, of which the Rio Grande is one, which flow into the Gulf of Mexico. Since flowing water always follows a downhill course, we



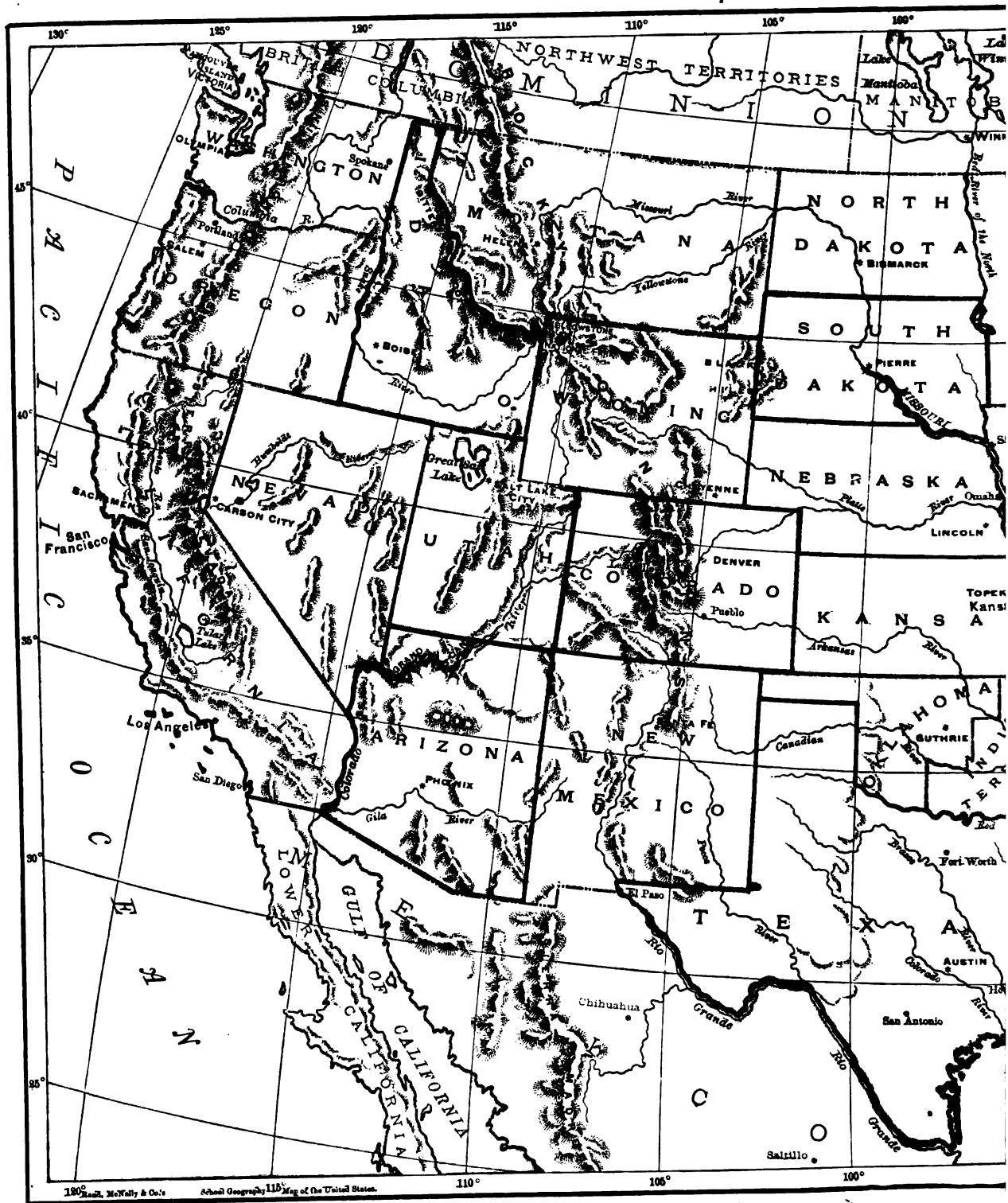
A YOUNG ELK.

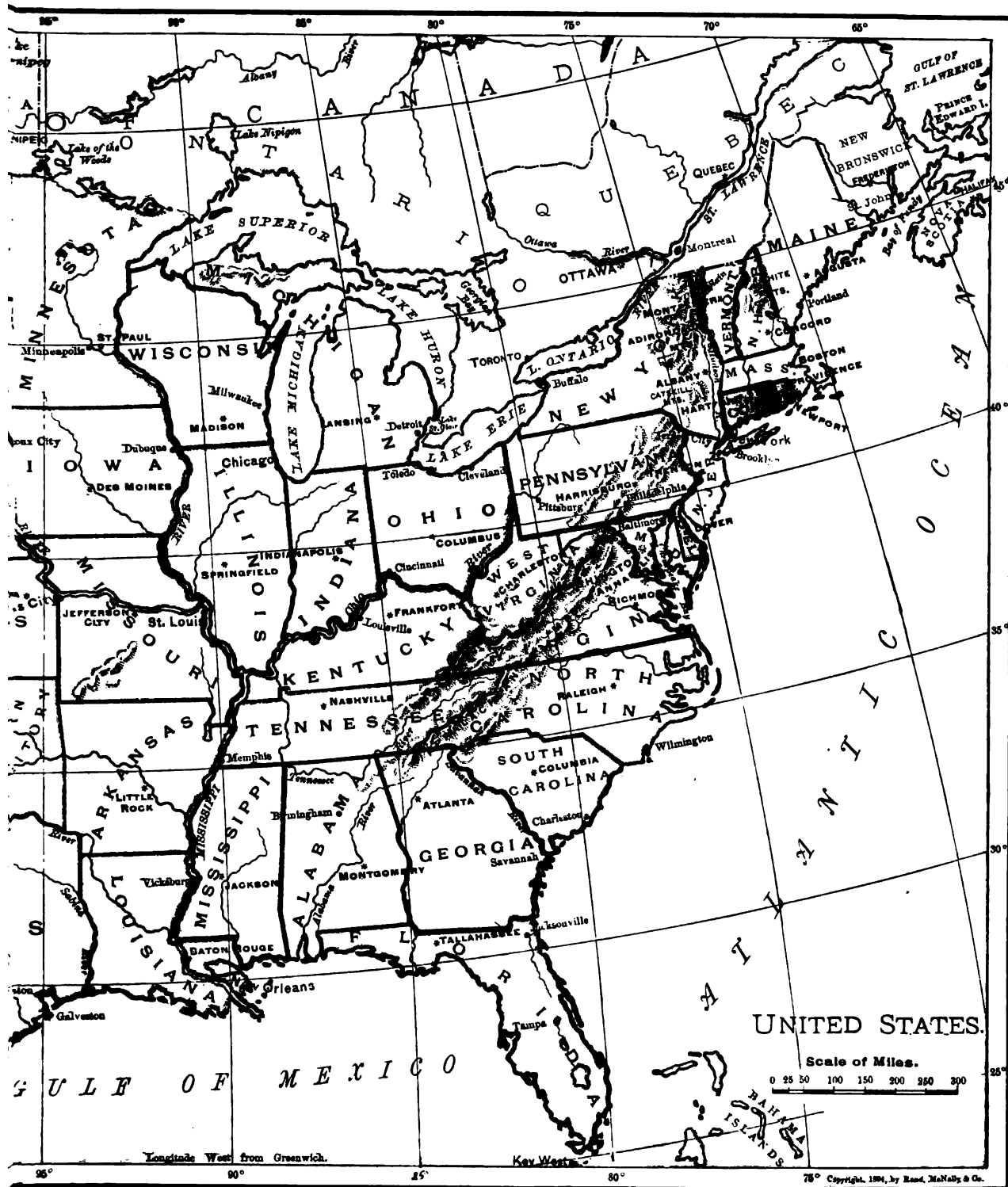


A MOUNTAIN RIVER.

can see by these rivers that it must be downhill eastward all along the Rocky Mountains. Westward, stretching from the high ridge of those mountains almost to the shore of the Pacific, the land lies much higher than it does eastward. It is a vast high plain, nearly all of which is higher than the high portions of the Appalachian Mountains, which you see in the eastern part. The mountains which you see scattered over it rise above the plain, and there are valleys between them. This great high plain or plateau is called the Pacific Highland. Find it on the picture of North America, page 64. It covers about one-third of the surface of the United States.

On account of the greater height of the Pacific Highland above the sea level, its climate is colder than that of the Mississippi Valley. For this reason, some plants that do well in the valley do not have enough hot weather on the highland to thrive. Corn is one of them. Much of the surface of the highland receives too little rain for farm crops to grow well. Still, farmers succeed in places where they can cause water





from the rivers to flow on to the land, so as to moisten the soil. Most of the drainage from the highland finds its way to the Pacific Ocean. Generally its rivers wind about among the mountains and through rocky



BASIN OF GEYSER.

gorges, and have many waterfalls. One of them, the Colorado, has worn its way down through the rocks, so that for a long distance its bed lies nearly a mile below the level of the land surface. The deep gorges through which the rivers of the highland flow are called canyons. The canyon of the Colorado is the greatest on the earth.

There is a great basin on the Pacific Highland which does not drain outward. All the water that falls into it from the clouds goes back into the air, no river leading from it to the sea. The rivers from the mountains, flowing toward the low part of the basin, form lakes. The dry air takes up water from these as fast as the rivers pour it in. These lakes were once much larger and deeper than they are now.

The streams have been washing salt out of the soil on the slopes for thousands of years, dissolving it and carrying it down into these lakes. When water is taken up by the air, all that was dissolved in it stays behind; and so the salt that has come to these lakes in the highland basin during so many years has remained, causing the water of the lakes to be like brine. In another part of the highland are found great spouting springs of hot water, called **geysers**. Here are pictures of one when it is spouting and when it is quiet.

Find Great Salt Lake on the map. Find the Humboldt River and the salt lake into which it runs.

In Utah, Nevada, and a part of California, there are many salt lakes which are not shown on this map.

There are many streams on the Pacific Highland which rise in the mountains and flow down into the valleys, where their water sinks away in the sand, and the streams end. The rivers have no mouths. Find the meridian marked 100°. Little rain falls west of that meridian, and for that reason not much farming is done between it and the Rocky Mountains, except where river water can be flowed on to the land. Much of the soil is good, but is too dry for the growth of plants. A few plants, such as the cactus and the shrub called sage brush, are found, and in



A GEYSER IN ACTION.

many parts some kinds of wild grass. This grass is good for cattle, horses, and sheep, and many thousands of these animals are raised there, and roam about almost in a wild state. The grass dries into hay where it



HARVEST IN THE WHEAT COUNTRY.

stands, and as there comes little snow to cover it, they feed on it during the winter. The herds, which are found in most of the valleys of the whole great Pacific Highland, are watched and cared for by men called cowboys.

Find the Cascade Mountains. Between that range and the Pacific Coast, much rain falls, and much farming is done. East of the 100th meridian there is plenty of rainfall in all parts of the United States, and farming is the principal business of the people.

Find the Appalachian Mountains on the map. Find this highland on the picture of North America, page 64.

Many storms come from the Gulf of Mexico, and sweep northward along the course of this highland. The rain from them falls on both of its slopes. Most of that which falls upon the west side comes down the slope in rivers and brooks, not shown on this map, into the Ohio River, though some water drains into that stream from between it and the

Great Lakes. Into what river does the Ohio flow? Where does its water finally reach the sea? That which falls upon the east side drains into the Atlantic.

The Mississippi extends northward from the Gulf of Mexico, and appears on the map like the trunk of a tree. Look at it on the map. The Ohio is like a great branch of the tree, having branches of its own. Notice it on the map. Nearly opposite the Ohio you may notice another great branch reaching off to the northwest, with branches of its own. What river is that? Follow up the branches of the Mississippi, and any of them will lead you to higher ground, most of them to

mountains. If you could see them you would notice that their water is not clear, but is mixed with fine earthy matter. Should a pail be filled with water from one of them, mud will settle to the bottom. They are all bringing fine earth from the high land to the low land.

This has been going on for many



SHEEP IN THE CALIFORNIA FOOT HILLS.



A GREAT HARBOR, TACOMA.

thousands of years. Much of the surface of the great Mississippi Basin has thus become covered with fine earth, which makes a rich soil for plants to grow in. Such great quantities of this fine earth, which is called **silt**, have been left at the mouth of the Mississippi River that thousands of miles of land have been made by it. You can see, on the map, where the land is now forming on each side of this river out into the gulf.

The eastern slope of the Appalachian Highland reaches to the sea, and under the water far into the sea. Much of the fine earth of the highlands has been gradually washed down to the sea-shore. Most of the rivers of the eastern slope flow directly to the coast. The surface of the mountains and their slopes consists mainly of farms and forests. Some of the forests are on low, swampy ground.

Most of the coast of the United States north of New York is rocky, but south of that point to Florida and around that peninsula, along the shores of the Gulf of Mexico to the Rio Grande and beyond, it is low and sandy.

The bays along the coast of the United States are very useful as **harbors**. A harbor is an inlet where the sea reaches into the land in such a way that storms can not make its water rough. Ships can lie in such places without danger of being dashed against the rocks or driven on the beach by wind or wave. Our country has many harbors on its eastern coast, and there are some excellent ones on its western coast. Most of those of the

east and south are the mouths of rivers.

On the western sea-line, as you may see by the picture of North America, the highland comes to the shore, and the coast is steep and rocky. The long, sandy slope reaching the water's edge is lacking on this coast, so that the rivers there have not scoured out estuaries, like those on the eastern coast. For this reason there are not many harbors, and, owing to the short slope, the rivers are fewer and much shorter than those of the eastern coast. Except the Columbia River, they are too swift and rocky to permit vessels to sail upon them.



VIEW ON PACIFIC COAST.

LESSON 39.

The United States.—Industries.

The condition of the different parts of the country has much to do with the business of the people who live in them. In the lowland part, the chief industry is **farming**. In the valleys the soil is generally good, and crops grow well there.



LEMON TREES AND LEMONS.

The kind of crops depends much on the latitude and altitude.

Florida and the other States bordering on the Gulf of Mexico are low in both latitude and altitude, and there

oranges, lemons, cocoanuts, bananas, rice, sugar-cane, and other warm-climate plants grow freely. **Cotton** grows in the southern third of our country, except where the land is quite high. **Corn** is an important crop in every State, except on the Pacific Highland, though it does not have a long enough summer in the northern row of States to thrive well. The most corn is raised in the central part of the Mississippi Valley. **Wheat** will grow in each of the States, but the most is raised in the northern half of the Mississippi Valley. Large



quantities are raised near the Pacific Coast, and some is grown on the Appalachian Highland and its slopes. **Oats, barley, hay, and potatoes** grow best in the northern part of the country.

The raising of domestic animals is a branch of farming. **Fowls** and **hogs** are common in all States, except in some parts of the Pacific Highland. Most hogs are raised in the corn area, for they are fed mostly on that grain. **Cattle** are raised in nearly all parts for milk, butter, and cheese, and also for beef throughout most of the Mississippi Valley, especially in the corn-growing part. They are fed largely on corn. **Sheep** are raised for their wool and for mutton in every State, but chiefly in the northern part of the country, and on the Pacific Highland and its eastern slopes.

Most of the forests are in the eastern half of our country, though there are some great ones on the higher slopes of the Rocky Mountains and along the Cascade Mountains. Most of the eastern slope of the Rocky Mountains has very little forest. The grassy plains of that region are called **prairies**.

In the forest-covered portion of the country, **lumbering** is an important business. Minnesota, and Maine, and the States that lie between them, in the northern part of the United States, furnish vast quantities of lumber. The logs are floated down the streams for great distances, and then sawed into boards, shingles, etc., and made into pulp for paper. Large rafts are made of logs and pushed by steamboats down the Mississippi. Much lumber is also made on the slopes of the Appalachian Highland. Some of the finest forests in the world are on



AN OREGON FOREST.

the slopes of the mountains in the north-western part of our country.

Between the Appalachian Mountains and the coast, from Chesapeake Bay to the Mississippi River, there is a wide strip of sandy land covered with a forest of yellow pine. Here much lumber is made, and **tar, rosin, and turpentine** are prepared.

Mining. Many men are busy getting valuable materials from the earth. The places from which these are dug are called **mines**, and the substances obtained are called **minerals**.

Coal is one of the most important of these. Many thousands of years ago there was a time when vast swampy forests extended over great areas in various parts of the world, especially in North America. There was much more rain then than now, and the air was much warmer, so that



LOGS FOR A PAPER-PULP MILL, MAINE.

plants grew rapidly. These forests consisted mainly of immense, fern-like trees and other swamp plants. They grew and fell, and more grew and fell above them, until the fallen trees, mosses, and other plants formed layers hundreds of feet in thickness. Sometimes floods piled sand and other rock substance above them, so that a great weight pressed the dead plant material closely together. This pressure, together with heat, slowly turned the mass to a black substance, which we call coal. While the plant matter was becoming coal the rock matter over it was turning to solid rock. Most of the coal was formed before the mountains of North America were thrown up. Huge beds were spread out



SHIPPING RED-CEDAR, ALABAMA.

below the surface of the great plain where the Appalachian Mountains are now. Other large beds were spread over the central part of the Mississippi Valley, and still others exist where the Pacific Highland now is.

When the earth's crust was torn and cracked in the eastern part of North America, the whole surface of the Appalachian country was wrinkled up into mountains, the beds of coal there being much disturbed and changed. The great heat of the inside of the earth came through the broken rock, and baked much of the coal of Pennsylvania. This, added to the enormous pressure, made it much

harder than it was before. That made it less easy to light, and slower in burning, than the coal in other parts which had not been so heated. This coal is called **anthracite**, or hard, coal. In the Mississippi Valley, and in other parts where the beds have not been heated, the coal is soft, and lights quickly, and burns very freely. It is called **bituminous**, or soft, coal.

In the parts of our country where many people dwell, much coal is used for fuel. It is brought from the mines chiefly by railroads, though vessels carry it along the coasts. There are many coal beds in our country that have not yet been opened, the product of which will be useful in future times, when many more people live here than now.

Mineral oil is found in various parts of the country, but chiefly in the Ohio Valley. It is obtained by drilling wells until they pierce certain layers of sand in which the oil lies. Sometimes it flows from the wells, but generally it is pumped



A SMELTERY.

up. After the oil is properly prepared it is used for light and fuel.

Mineral gas, found in the Ohio Valley, comes with great force from wells like oil wells, and is used for light and fuel.

Different kinds of rock are valuable for building purposes. Among them are **granite, marble, sandstone, and slate**. The places in the earth from which they are taken are called **quarries**. Rock is quarried in all the States.

Clay is another useful mineral, which is found in all the States. It is used in modeling, and from it are made pottery, china, earthenware, brick, etc.

Iron is one of the most important minerals. It exists in great quantities in many parts of the country, but it is most easily obtained where the rock-layers have been broken up into ridges and mountains. The throwing up of the Appalachian Highland exposed beds of iron ore, which have been found and worked by the people who live upon the highland.

Iron, lead, copper, zinc, tin, silver, gold, etc., are metals. Generally they are taken



A ROCK QUARRY.

from the earth united with rock, this mixture being called **ore**. So we have iron ore, lead ore, copper ore, etc. These metals are separated from the rock by the melting of the ore at works called smelteries. A picture of one of the largest of these is shown on the preceding page. There are deposits of iron throughout the Appalachian Highland, and thousands of men are busy there, melting the iron ore, with the coal for fuel, to procure the iron. In the northern part, however, there is not much coal, and charcoal made from the trees of the mountain forests is used instead. Look at the map and tell which States, judging by the mountains, are the great eastern iron States.

There are great deposits of iron ore near Lake Superior, but there is no coal there. Much of this iron ore is taken to the city of Chicago, and coal is taken from the coal fields of the Ohio Valley to melt it, and there vast quantities of steel for railroads, etc., are made. Steel is iron of a certain fine quality.

Gold has been found in most of the States, though in many of them it is not profitably mined. It is found in the mountainous parts and generally comes mixed in the ore with silver or copper, and sometimes with iron. In some places gold is found in sand, which was made by the wearing down of rock which contained gold. Men wash this sand, and gather the little particles of gold.

Silver is a mountain mineral, generally found in the ore with lead or copper. There are many mines in the Pacific Highland which yield it.

Copper is found mainly near Lake Superior, and in the mountains of Montana.

Lead is found in many places, but

chiefly in the highland indicated on the map by some mountains in Missouri, and around Dubuque on the Mississippi River, and in the Rocky Mountains.

Some of the people work at getting fish from the sea, and from the lakes and rivers; this business is called the **fisheries**. From the sea they obtain cod, halibut, mackerel, herring, and other kinds, besides shellfish, such as lobsters, oysters, and clams. In the rivers shad and salmon are caught, and in the lakes whitefish, trout, etc.

Most of the sea fishing is done in vessels which sail from harbors along the northern half of the Atlantic Coast. The lake fishing is done mainly in the Great Lakes. Large quantities of salmon come from the rivers in the north-west corner of the country and from those of Alaska, and some from the rivers of the Northeast.



FISHING SCHOONER.

Many of the people of the United States are busy in making goods from the products of the farm, forest, mines, and sea. Such mak-

ing of things is called **manufacturing**.

From wood are made parts of houses, such as windows and doors, and also furniture, wagons, etc. From the grains of the farm are made flour, meal, starch, alcohol, syrup, and other things, while sugar is made from sugar cane and beets. Cotton and flax are made into cloth, thread, etc. Bacon, hams, and lard are made from hogs, and leather, glue, etc., from cattle, and cloth is made from the wool of sheep.

Different goods in great variety are made of iron, copper, lead, wood, etc., combined, such as tools, machinery, ships, and cars.

Most of the manufacturing of the country is done east of the Mississippi River and north of the Ohio.

LESSON 40.

**The United States—
Commerce.**

The business of the country makes it necessary for great amounts of material to be carried from place to place. Cotton is moved from where it grows to the manufacturing part of the country, to be made into cloth, and so is wool. Iron, lumber, and many other things are carried long distances to be made up, and the finished goods are then moved to those parts of the country, where they are used.

Food is moved from the farming sections to the manufacturing and mining ones. Coal is carried for hundreds of miles from the mines, to be used as fuel, and to keep the steam-engines running which move machinery. The business of those who carry goods and people from place to place is called **transportation**; many thousands of people are engaged in it.

The carrying is done mainly by cars drawn by engines upon railroads, though along the coast, and on the rivers and lakes, much is done by steamboats. Coal



RIVER COMMERCE.

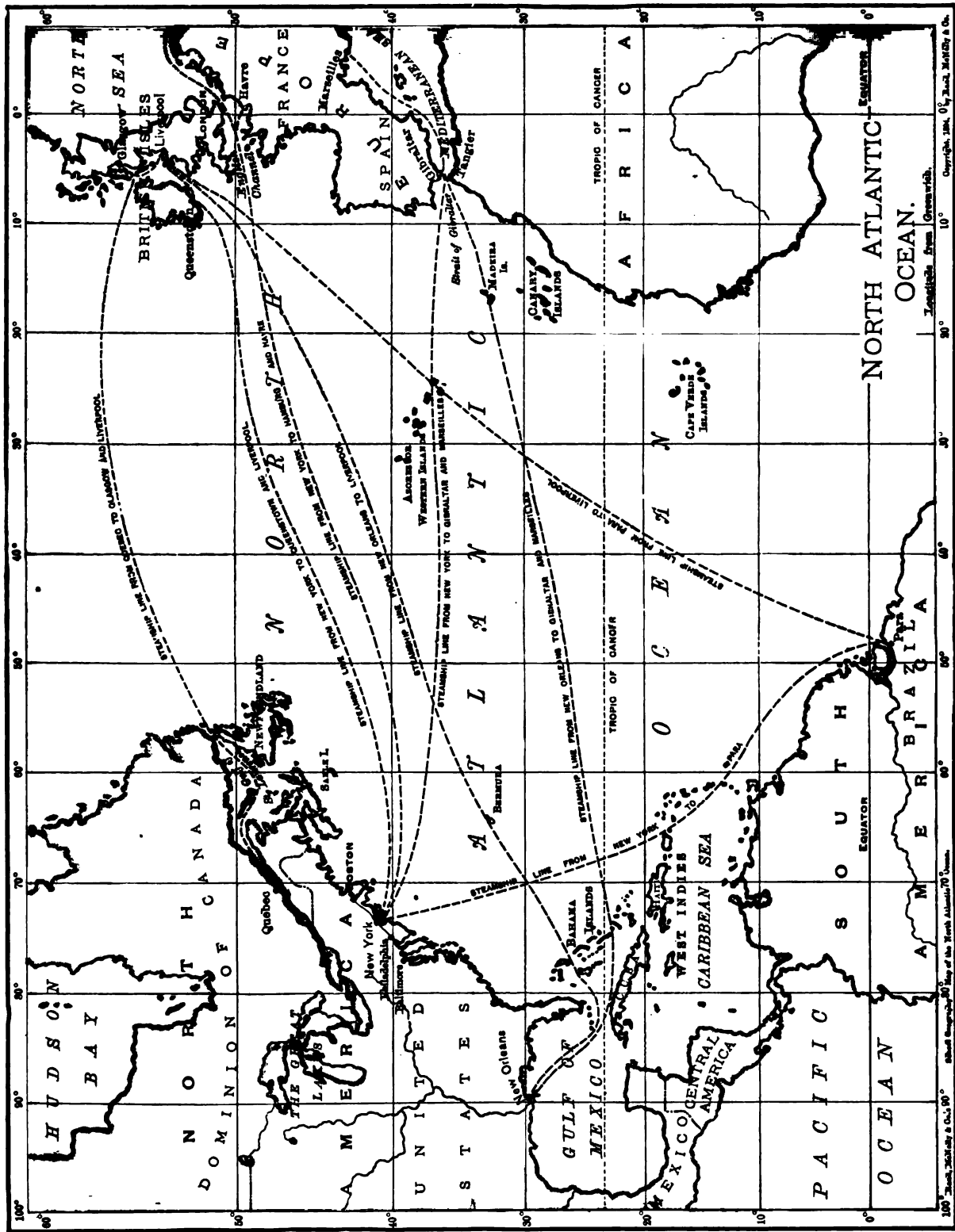
is generally burned in locomotives and steamboats to produce the steam which moves them. There are nearly 200,000 miles of railroad in the United States, or enough to follow the equator around the earth eight times. Trenches have been dug across various parts of the country, which, filled with water, become passageways for boats. They are called **canals**.

The trading of different materials and goods for each other, and the buying and selling of them, are called **commerce**. Our people buy, sell, and exchange, largely, with the people of other nations. That kind of commerce is called **foreign commerce**. Its carrying is done mainly by vessels that cross the ocean.

Most of the things which our people need for their comfort and pleasure are produced or made in our own country. But there are some which we seek in other parts of the world. **Tea** comes from Asia. It will grow in some parts of our country, but it is better to buy it abroad. **Coffee** comes from Asia and South



CANAL BETWEEN TWO OF THE GREAT LAKES.



America. **Spices** come chiefly from the islands of Asia. **Rubber** comes mostly from South America, and likewise many kinds of wood for furniture. Many of our **medicines**, as **opium** and **camphor**, come from Asia. **Cork** comes from Europe.

Large quantities of **pineapples** and **bananas** are brought to all parts of the United States from Central America and the West Indies. These and other tropical fruits, however, are cultivated extensively in the southern part of our country. Pineapples, especially, are now largely grown.

Of many things which we consume, we buy a part of our supply abroad, and produce the rest at home. Of these, cotton and woolen cloths come from Europe, and silk from Europe and Asia; **wines, raisins, lemons, oranges, and olives** from Europe, but we also produce all these articles ourselves. **Sugar** comes from South America, Cuba, Egypt, the islands of the Pacific Ocean, and Europe.

We send to other countries, chiefly, **wheat, corn, cotton, beef, pork, and mineral oil.**

The ocean vessels, which do the carrying between our country and others, come to our harbors, and are drawn up to the sides of great platforms, at the water's edge, called wharves, where railroad cars and wagons can be brought alongside; and there those vessels discharge their cargoes of merchandise, and take on cargoes of such goods as we send away.

One of the best harbors we have is that at the mouth of the Hudson River. Find it on the map. Here is a wide expanse of water, deep enough for large vessels, which lies behind some islands, whose hills pro-



A BANANA PLANTATION.



tect it from storms which may rage on the ocean. No matter how rough the sea may be outside, the water is smooth and quiet in the harbor. From this harbor vessels go to Europe, Africa, and South America, carrying merchandise which we sell to people of those parts of the world, and to it they return, laden with the things which we buy. On page 82 you will find a

map of the Atlantic Ocean, showing where some of these vessels go.

Railroads leading from all parts of our country connect with each other, so that by



OCEAN STEAMERS AT WHARF.

them the goods we send out of the country from this harbor can reach it, and those which enter it from abroad can be distributed. Vessels sail from it, up and down the Hudson River, and also north and south along the coast to other harbors. A harbor where commerce is carried on is called a **port**. The one we speak of is the port of New York, and here has grown up the city of **New York**, the greatest in our country. Near it is another great city called **Brooklyn**. There are also several smaller cities in the neighborhood.

There are other good harbors on the Atlantic Coast, at each one of which a city has grown up. The city at one is called **Boston**, at another **Philadelphia**, at another **Baltimore**, and at another **New Orleans**. These are large cities. Find them on the map, page 73. At other harbors are smaller cities.

On the Pacific Coast, besides other ports, there is an excellent harbor where the city of **San Francisco** has grown up. Find it on the map. Much of the trade of our

country with the countries on the Pacific is carried on through this port. In the central part of the United States a great city has grown up at a harbor on one of the Great Lakes. It is **Chicago**, on Lake Michigan. Find it on the map.

Goods which are sent out of the country are said to be **exported**, and those brought in are **imported**. Our nation generally exports more goods than it imports.

In what State do you live? Place a dot at the point where you live. Now take a look at the map, and consider how far you live north from the Gulf of Mexico, where it is warm, and south from the northern boundary of our country, where it is cold. Do you dwell in the warm or the cool part of the country? Do you live in the Mississippi Valley, or on the Atlantic Slope, or on the Pacific Highland? In a plain country, or a mountainous one? What is the leading business of that portion of the country in which you live—agriculture, mining, lumbering, fishing, manufacturing, or commerce?

LESSON 41.

New England States.

There is a little group of States in the extreme north-east part of the United States which is usually spoken of as New England. That region was given that name by Captain John Smith, an Englishman, who first explored its coast thoroughly. Afterward many English people went there to live, and they delighted in saying that they had come from old England to build up a New England. They named many of the towns they founded after those they came from, and thus it happens that English names of places are so common in New England.

Different parts were settled by the immigrants and governed by the mother country. These were called colonies. There were four of them at the time of the Revolution—Massachusetts, Rhode Island, Connecticut, and New Hampshire. When our country became a nation, these four colonies became States. Since that time, portions of New York and Massachusetts have been made into two more States, Vermont and Maine. Thus there are six New England States.



BOSTON HARBOR.

The area of the whole is not so large as that of some single States of the Union.

The coast has many inlets and, consequently, many harbors. Around one of these, Boston Bay, some of the first settlements were made, and these have grown to be cities. Boston is the largest, and is the leading port of New England.

The climate is cold in winter and warm in summer. The growing season is much shorter than it is in States farther to the south, and considerably shorter in Maine than it is in Connecticut.

As you see by the map, the Appalachian Highland covers a very large part of these six States, the slope being toward the coast.

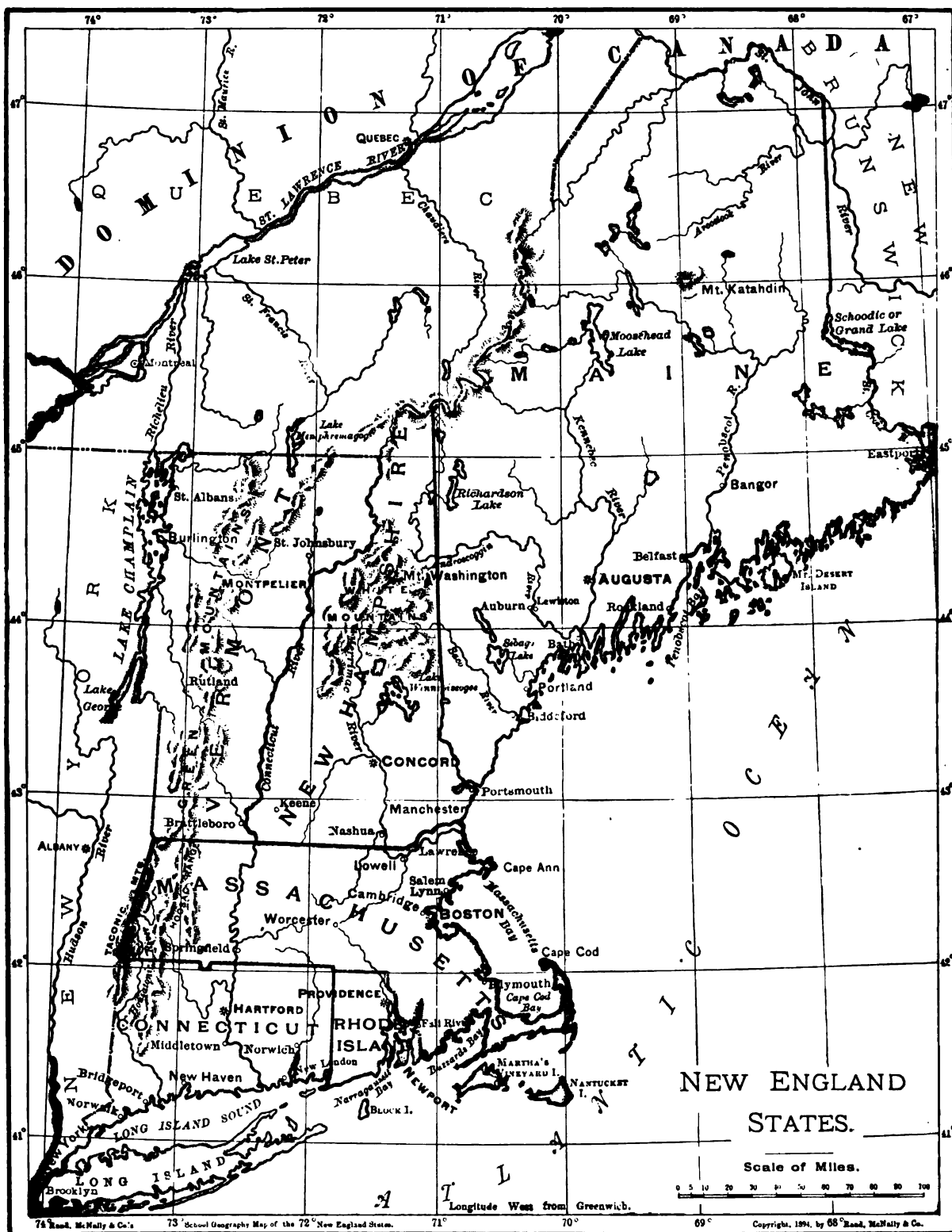
There is a plentiful rainfall, which causes many rivers to flow down the slope. These have numerous waterfalls, which furnish power for machinery. Few are navigable, and these for only a short distance from the sea.

The soil is generally poor, so that **farming** is not very profitable, and people turn to other industries than agriculture, for business.

Along the coast, many men are engaged in the **fisheries**. Most of the salted fish



THE COAST OF MAINE.



used in the United States is packed in towns on the coast of New England.

The rough slope is covered with natural timber, though much of it has been cleared away. This growth of forest gives opportunity for **lumber-**

ing. The gathering of the bark of the hemlock tree, to be used in making leather from hides, is also a forest industry.

There is much solid rock at the surface, some of it of good quality for building, such as granite, marble, slate, and sandstone, and thus **quarrying** has become an important business.

Another business is **manufacturing**. The water-power of the streams affords opportunity for this, and it has become the leading industry. In order to engage in this work, many people have come to New England to dwell, which has caused this part of the country to be very thickly populated. It has many cities and towns.

There is much **commerce** with other parts of the United States; cotton comes from the South; oil from the Ohio Valley; grain and meats from the Mississippi Valley; coal from Pennsylvania, and many other materials from all quarters. Back there from New England go manufactured goods in great variety, such as cloth, leather, boots and shoes, rubber goods, wooden goods, furniture, paper, steel, iron, brass, silver and gold goods, and also salted fish. The manufacturing interests



A MANUFACTURING CITY.

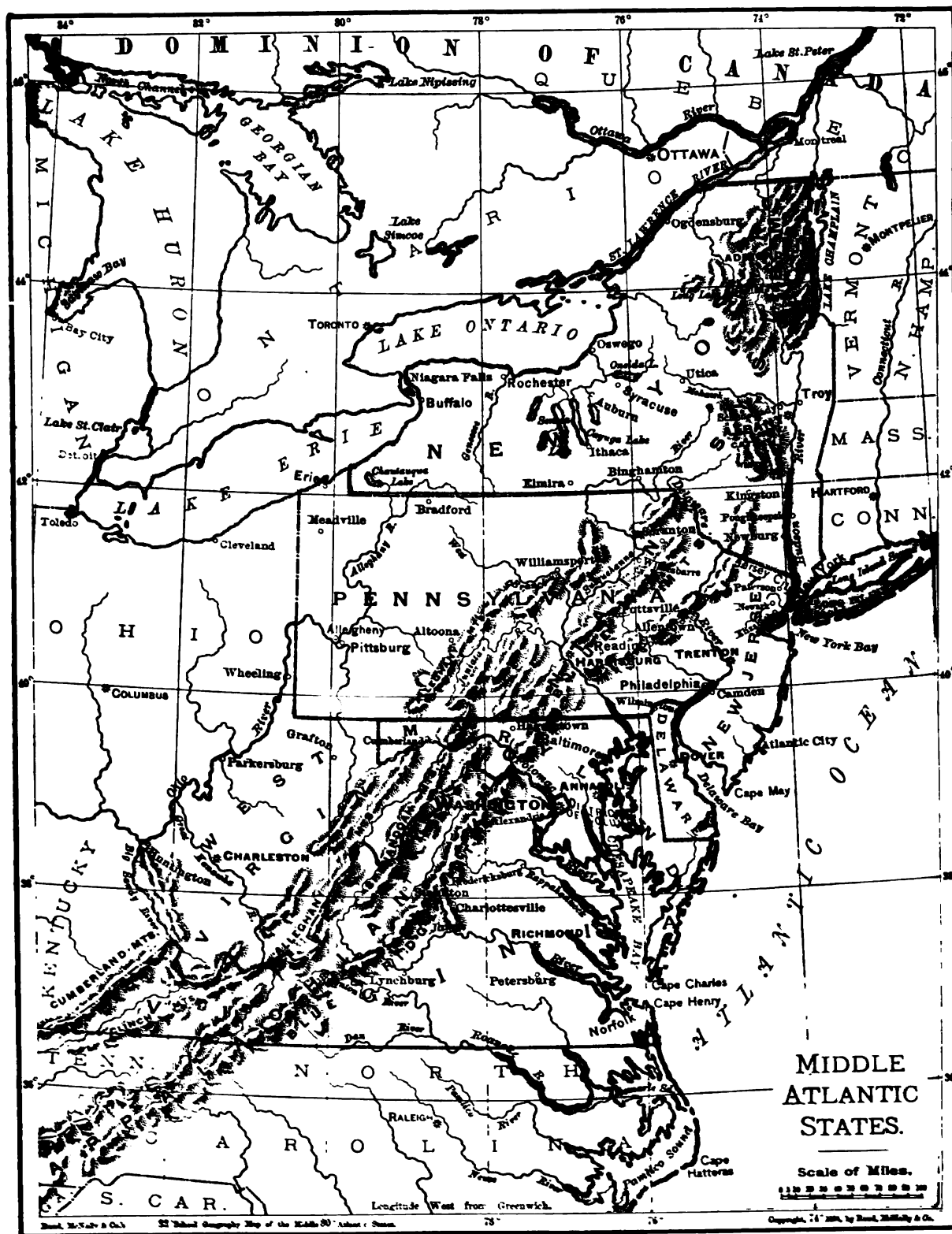
of the United States began in New England, and, as the country has advanced, have extended outward into other States.

Most of the coast south of Maine is low and sandy, although Cape Ann and part of the coast of Rhode Island

and Connecticut are rocky. The peninsula of Cape Cod, and the islands near it, are high and sandy. What is the name of the sound between Long Island and Connecticut?

Bangor is one of the greatest lumber centers in the world. Augusta has grown up at the falls of the Kennebec, and Lewiston and Auburn at those of the Androscoggin. At all three cities, cloth is made by means of the water-power.

The Merrimac has falls at several places, at each of which a manufacturing city has grown up. Find Manchester, Nashua, Lowell, and Lawrence. All four are great cloth-making cities. Fall River, on Narragansett Bay, is another. Find Lake Champlain. On the slope from that lake to the mountains are many forests which yield lumber, and Burlington is the city where most of it is manufactured and sold. Many logs are floated down the Connecticut and made into lumber at towns on that river. Springfield and Worcester manufacture a great variety of goods, many being made from metals. The same may be said of Hartford and Providence. Find these four cities. Hartford is reached by steamboats on the Connecticut River.



LESSON 42.

The Middle Atlantic States.

Adjoining New England is another group of States, which covers an area nearly three times as large. They are seven in number, and their names are: New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and West Virginia. All except West Virginia were once English colonies, becoming States when our nation was formed. West Virginia was set off from Virginia and made a State since then. These are known as the Middle Atlantic States, because they lie along the middle of our Atlantic Coast.

On the Potomac River is a small territory, or district, with an area of sixty square miles, known as the **District of Columbia**. It was once a part of the State of Maryland, but is governed now by the United States. Within it, is the city of **Washington**, the capital of the United States. To this city come the Members of Congress from all the States, to make laws for the nation, and here the President dwells. There is a picture, on page 45, of the building where Congress meets every year.

Lengthwise of the section, running in a northeast direction, extends the Appalachian Highland, like a great mound, 700

miles long, and nearly 100 miles wide at the top. On the east the highland slopes away to the coast, and, on the west, to the Ohio River. Much rain falls on this highland and its slopes, so that many rivers flow from it. It was once much higher than it is now, but it has been worn down by the rains, and a good deal of its substance washed toward the sea on one side, and into the Ohio Valley on the other.

Among the mountains are many narrow valleys, through which the rivers wind seeking a way to the sea. Observe, by the map, how very crooked the streams are, and how they seem to break through the narrow and wall-like ridges.

The earth that has washed down the slope has built land out into the ocean along the coast for a distance of many miles. Long Island, the southern part of New Jersey, all of Delaware, and a large part of Maryland and



NATURAL BRIDGE, VIRGINIA.

Virginia were thus made.

Notice that most of the rivers, as they approach the ocean, widen out into bays. This is because their currents and the tides of the ocean have scoured out and swept into the sea the soft, sandy earth which forms the land. Delaware and Chesapeake bays were made in this manner. Find them on the map. The tide is a rising and falling of the water of the ocean



PENN'S HOUSE, PHILADELPHIA.

twice each day. It causes strong currents to flow in and out of bays. What river has thus caused Delaware Bay to form? Chesapeake Bay? Observe that in Chesapeake Bay, several rivers have scoured out smaller bays for themselves. A bay thus formed is called an **estuary**. Find the Hudson River. Notice that it has no wide estuary like the other rivers. That is because it flows through solid rock.

The **climate** varies from north to south, the growing season being much longer in Virginia than in New York. It is cooler on the highland than on the Coastal Plain, because of altitude, but is warm enough on the mountains for successful farming.

This section was not so generally settled by the English as New England was, the colonists coming from different nations. New York was partially settled by people from a country in Europe, called Holland, and Delaware by people from another, called Sweden. Pennsylvania, which received its name from William Penn, the owner of the land, was settled by English Quakers; Maryland by English Catholics, and Virginia also by colonists from England. Jamestown, in this State, was the first English town in America.

Farming is the leading industry. Next in importance is **manufacturing**, which

has extended from New England into the northern half of the section, where it prevails much more generally than in the southern one. The products are much like those of New England, except that iron is made in far greater quantities.

Mining is a very important business, especially that of coal and iron. Mineral oil and gas are obtained in vast quantities in the Ohio River Valley. Zinc is mined in New Jersey and Pennsylvania.

Lumbering is carried on extensively because of the great forests of the Appalachian Highland. Leather is made very largely in Pennsylvania, hemlock bark from the forests being used in tanning it.

The **fishing** industry is an important one. Great quantities of oysters are taken in Chesapeake Bay, where they abound.

Philadelphia is a great commercial and manufacturing city. Large quantities of carpets and wall paper are made here. It is the chief port for the shipping of petroleum oil to other countries.

Baltimore has an extensive commerce, and is the great center for the oyster trade.

Pittsburg leads in the manufacture of iron, steel, and glass. It lies in a coal region, and also has abundant mineral gas.

Trenton has the leading chinaware and pottery factories of the country.



VIEW ON POTOMAC RIVER.

LESSON 43.

Southern States—Eastern Division.

PALMETTO TREE.

This group of States is in the southeastern portion of the United States. It is in this section that the Appalachian system of mountains begins.

By studying the map you will see that the end of the highland covers a part of five States, and also that the opposite end of each of these States is low. Here are some of the highest peaks in this system. The land slopes away from the end of the highland, all around.

The warm air takes up great quantities of water from the surface of the Gulf of Mexico. This air moves, as wind, northward, and as it rises up the slope and reaches these mountains, it cools, and drops its moisture freely as rain. The rainfall drains away in all directions except north, as you may see by the many rivers that flow east, south, and west.

As the rivers flowing from this mountain country approach the coast or the Mississippi, the land becomes low and flat. The greater part of each of these States is without mountains even or high hills. Florida and Mississippi are composed entirely of lowland.

The coast is low and has many inlets, capes, and islands. These consist mostly of great heaps of sand, piled up by the tides and currents of the ocean. They are generally long and narrow, lying parallel with the shore. Between them and the mainland are bays or

sounds. Pamlico Sound is an example. Find it on the map. Some of the islands near Florida are of coral formation. Much of that peninsula has, for a foundation, a rock composed of shells and coral.

The climate is warm. In the low portion the growing season is long and hot, but is cool and pleasant in the mountains.

Forests cover most of the surface; hence lumbering and the making of pine-tree products are important industries.

The soil is generally good, though much of the lowland is covered by vast swamps, which are useless for agriculture.

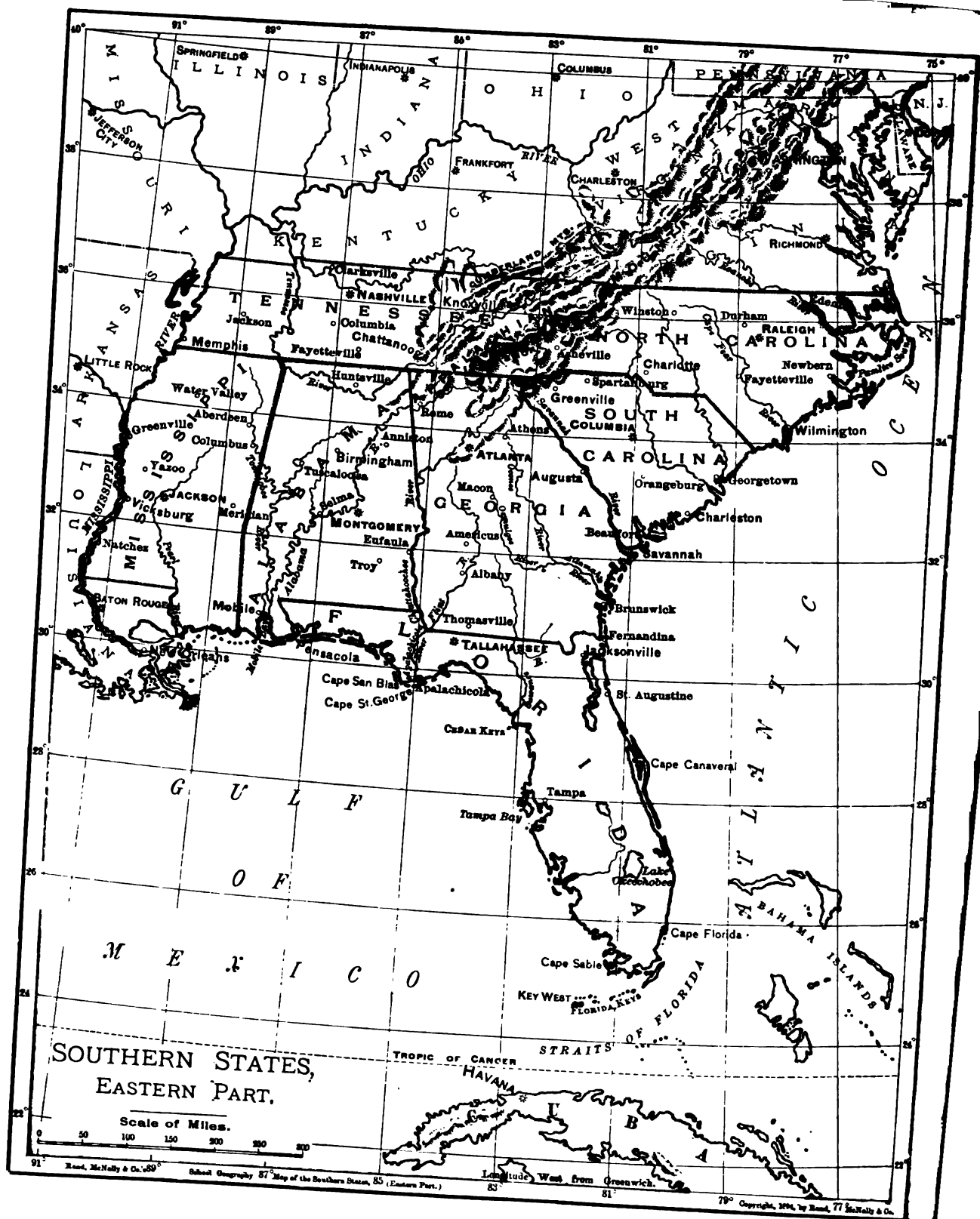
Except in the mountains and in the lower part of Florida, the staple farm crop is **cotton**. On some of the low islands north of Florida, grows a special variety of cotton, the finest in the world. It is called sea-island cotton, because it will grow nowhere but on these low, coast islands.

Rice is cultivated along the coast. It grows best in fields that can be covered with water. It is common to all the coast States from Virginia to Mexico, but is raised most extensively in Louisiana.

Wheat is grown chiefly on the highland, where the climate is cool. **Corn** is



COTTON PICKING IN MISSISSIPPI.



a regular crop except along the coast. **Oats** are grown upon the highland, mainly. **Fruit** is grown chiefly in Florida and along the Gulf Coast, and is of torrid zone varieties, such as oranges, lemons, pineapples, and coconuts. Apples, peaches, grapes, cherries, etc., need a cooler climate and grow on the highland.

Sugar is produced in each of the States except Tennessee.

Coal and **iron** are found in the mountains of Tennessee, Alabama, and Georgia; hence the industries of mining and iron smelting have become prominent in those States. **Gold** is found in the hills of North Carolina, South Carolina, and Georgia. Tennessee has fine varieties of marble.



A PINEAPPLE FIELD.



MANGROVE TREES, FLORIDA.

Sponges are found at the bottom of the sea along the coast of Florida.

The rivers, before they reach the low country, abound in falls, which can furnish much water-power. Besides this, there is an inexhaustible supply of coal in the high country, for fuel. These sources of power are used, to some extent, for manufacturing the cotton which grows so extensively. Already much iron is produced, and there is no doubt that, with the growth of our country, the highland portion of this group of States will become noted as a great manufacturing section.

The Carolinas and Georgia were settled by people from England. All three were English colonies, and became States when the nation was established. Florida was purchased by our Government from Spain.

The country is not so densely peopled as are the New England and the Middle Atlantic States, and has fewer large towns and cities; but, as manufacturing develops, population will increase, and cities will grow.

LESSON 44.

Southern States—Western Division.

MISSISSIPPI RIVER STEAMER.

The Southern States form a belt which extends from the edge of the Pacific Highland to the Atlantic. The Western Division embraces that part which lies west of the Mississippi River, except a small portion of Louisiana. Notice, on the map, the beginning of the Rocky Mountains,

and that the rivers all flow from this high land southeasterly, either into the Mississippi or the Gulf of Mexico.

There is a wide strip of land which extends from Mexico northward to Canada, covering the higher part of the eastward slope from the Pacific Highland. It is

the great grazing ground of the nation, and is spoken of as "The Plains." Much of the western part of the division we are speaking of lies within "The Plains." The people dwelling there are largely engaged in raising cattle and sheep. Farther east, where the land is low, near the Mississippi River, and along the coast, agriculture is the principal business, **cotton** being the chief crop. The different grains grown in the Eastern Division of the Southern States are raised here also. Louisiana produces more sugar, molasses, and rice than any other State.

A large part of the lowland of Louisiana and Mississippi has been made by the Mississippi River, which deposited there the mud it had taken up in its course of 2,000 miles. This making of land is still going on, enough earthy matter being thus brought every year to build up land six feet deep on an area six miles square. With the mud, the river carries along also thousands of trees, which, growing on its banks, fall into



A LOWLAND PLANTATION, LOUISIANA.

the water after the earth is washed from their roots.

The land that has been made by the river lies nearly on a level with the water, and stretches away, low and flat, for miles on either side. For many hundreds of miles dikes have been made along the stream, to keep the water from spreading over the country in time of flood. These dikes are known as "levees." Sometimes they break, and water covers the low farms, or plantations, as they are called, doing great damage.

Notice, by the map, that the river has extended the land into the Gulf. Such a body of land built by a river is called a **delta**. See cut page 26. There are deltas in many parts of the world.

The great river with its branches drains more than a million square miles of land. The products of much of this great basin can be sent by boat down the river to the Gulf of Mexico. But the shallow boats



NEGRO LIFE IN THE SOUTH.

that are suitable for the river are not built for work on the ocean, so the point where the deep-sea vessels can meet them has become a very important port, and the great city of New Orleans has grown up there.

Louisiana once belonged to France, and many people now dwelling there speak the French language. Texas was formerly a part of Mexico, which was settled by the Spaniards, and some of its inhabitants still speak the Spanish language.

In those States which border on the Gulf, the climate is very warm—so much so that white people can not endure labor in the fields as well as the Negro, who, being native to the torrid zone and hence well adapted to a hot climate, easily withstands the effect of the heat, and engages freely in outdoor work. Most of the agricultural work of the Southern States is performed by Negroes.

The soil that has been made by the river is very fertile and yields great crops.



A CANEFIELD.

LESSON 45.

The Central States.

That part of the Mississippi Valley which lies west of the Middle Atlantic States and north of the Southern ones, consists of a group called the Central States. The latter lie very nearly in the central part of North America.

Put your pencil on the Mississippi River at the bottom of the map, and notice that toward that point nearly all the rivers of this section take their course. Here the waters from all these States mingle to-



FORMER INHABITANTS OF THE PLAINS.

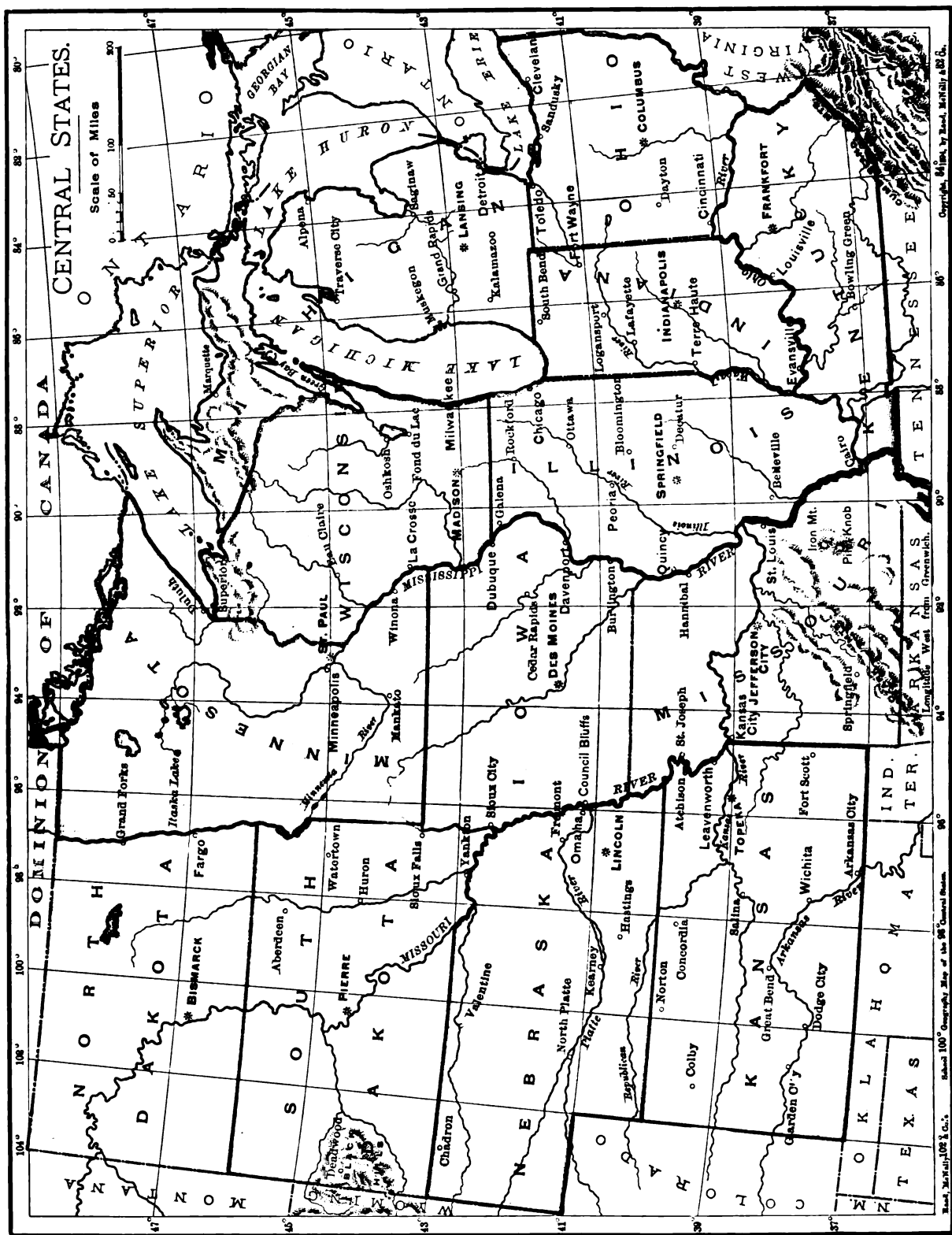
gether in one stream. From the east there comes the Ohio, from the west the Missouri, and from the north the main river, each with its branches. Toward this point the land slopes, except within a small area, where a few short rivers flow northward into the Great Lakes.

There are some low mountains in the south, the Ozark, and a few in the west,

the Black Hills, but generally the country consists of plains. Among these are great, treeless, grass-covered tracts, called **prairies**.

Over the plains once roamed millions of buffalo, but since the country has been settled by white men, these animals have been killed off almost entirely, and in their place are now millions of cattle. The Central States raise more cattle than any other equal area in the world. On the plains the cattle roam about, feeding on native grasses, but in the States east of the plains they are cared for, and fed with hay and grain.

These Central States have a climate which, except in the northern part, is well adapted to the growth of corn, and this is



the principal crop. Wheat grows throughout the whole section, except in the arid portion in the west, and is harvested in enormous quantities, especially in the northern part. The manufacture of flour from it is an important industry in many cities and towns. The mills of Minneapolis alone can manufacture as much as 40,000 barrels of flour per day. Barley, oats, and flax are produced mainly in the north.

Much of the corn and oats raised is fed on the farms to stock, the animals being sold and shipped, by rail, to the East. Corn is very good feed for hogs, and, consequently, these are raised in vast numbers. Cattle and hogs are brought to Kansas City, Omaha, Chicago, and other cities, where they are slaughtered, the beef and pork made being sent further east and south, to parts of our country where they are not produced in sufficient



A VIEW IN THE OZARKS.

quantities to supply local needs. Sugar from beets is manufactured extensively in Nebraska. Possibly the time will come when nearly all of the 4,000 tons of sugar used per day in the United States will be made by our own people.

The trade of the Central States, in supplying other States with food materials, forms a large part of the commerce of the country.

The surface of the earth has not been broken here as it has been in the Appalachian region, and, hence, the **minerals** of the earth have not been exposed so much. Yet in some places there are mountains and hills where iron and other ores have been uncovered. In the Ozark Mountains iron is abundant, as it is also in Kentucky and Ohio, in the hilly region near the Appalachian Mountains. It is also found in large quantities in the hills along the shore of Lake Superior. Lead and zinc are found in the hills of Missouri and Kansas, west of the Ozark Mountains, and also around the city of Dubuque, on the Mississippi River. Gold and silver are mined in the Black Hills. Copper is very abundant in the hills near Lake Superior.

Coal lies in broad sheets under much of



A MOUNTAIN PATH.

the surface, though in Kentucky and Ohio it has been somewhat disturbed by earth movements, like those which threw up the Appalachian Highland. Illinois and Indiana have an abundance of coal, and Michigan contains some. Mineral oil is found in great quantities in Ohio and Indiana, and so is natural gas.

The great forests of the Northern States furnish an abundance of lumber for those

States which consist mainly of prairies.

In general, the people of the Central States procure their manufactured goods from the eastern portion of our country, devoting their attention to **agriculture** instead of manufacturing, though the latter industry is not neglected. In the eastern States of this group, coal and natural gas furnish steam-power and fuel for smelting ores; so that **manufacturing** is important, and is increasing rapidly. Chicago is the leading city of the country in the manufacture of steel.

Near the point where the Missouri joins the Mississippi, a large city has grown up, through which much of the commerce of the country to the westward passes. Find **St. Louis** on the map. Up the river, near the point where boats can go no farther, are two large cities, through which the commerce of States to the westward passes. Find **Minneapolis** and **St. Paul** on the map. Nearly north of these cities are **Duluth** and **Superior**, at the end of Lake Superior. They are important ports from which vessels may take cargoes of material brought by railroads, and carry them by way of the Great Lakes to the

city of Buffalo. Find it on map, page 88. Find a city near the south end of Lake Michigan. What is its name? What city on the lake shore lies north of it?

Milwaukee is the second port in importance on Lake Michigan. The position of **Chicago** as a natural center of trade has made it the most important and the largest city in the Central States. A greater extent of country sends its productions through this city than through any other mentioned, and it has thus become the greatest railroad city in the world.

Not only do the products of the Central States reach the East by rail, but an immense commerce also passes through the Great Lakes by vessel. The commerce which goes from the western to the east-

ern lake cities is far greater than that which goes across the Atlantic Ocean. At the narrow passage where the commerce of the three larger lakes enters Lake Erie, there is a natural harbor, and at that point the city of **Detroit** has grown up.



SQUAW AND PAROOSIE.

These States are more thickly settled than the Southern, and less so than the Eastern States. Population is increasing, and this section, which not many years ago was the home of the Indian, is rapidly becoming one of the busiest parts of our great country.



A LAKE STEAMER.

LESSON 46.

The Pacific States.

This section of our country includes more than a third of its entire area. It lies across the great highland which extends throughout the length of the continent. The main chain of mountains, called the Rocky Mountains, crosses the eastern portion of the highland and the Sierras cross the western portion. Between these is a great valley or basin, called the Great Interior Basin, the bottom of which is very high above the level of the Mississippi Valley, and even higher than the top of the Appalachian Highland.

There are two great knots of ridges in the mountain chain where the highest land lies. Throughout the summer the snow on the peaks melts and feeds the rivers, which



TEAM HAULING LOGS IN CALIFORNIA.



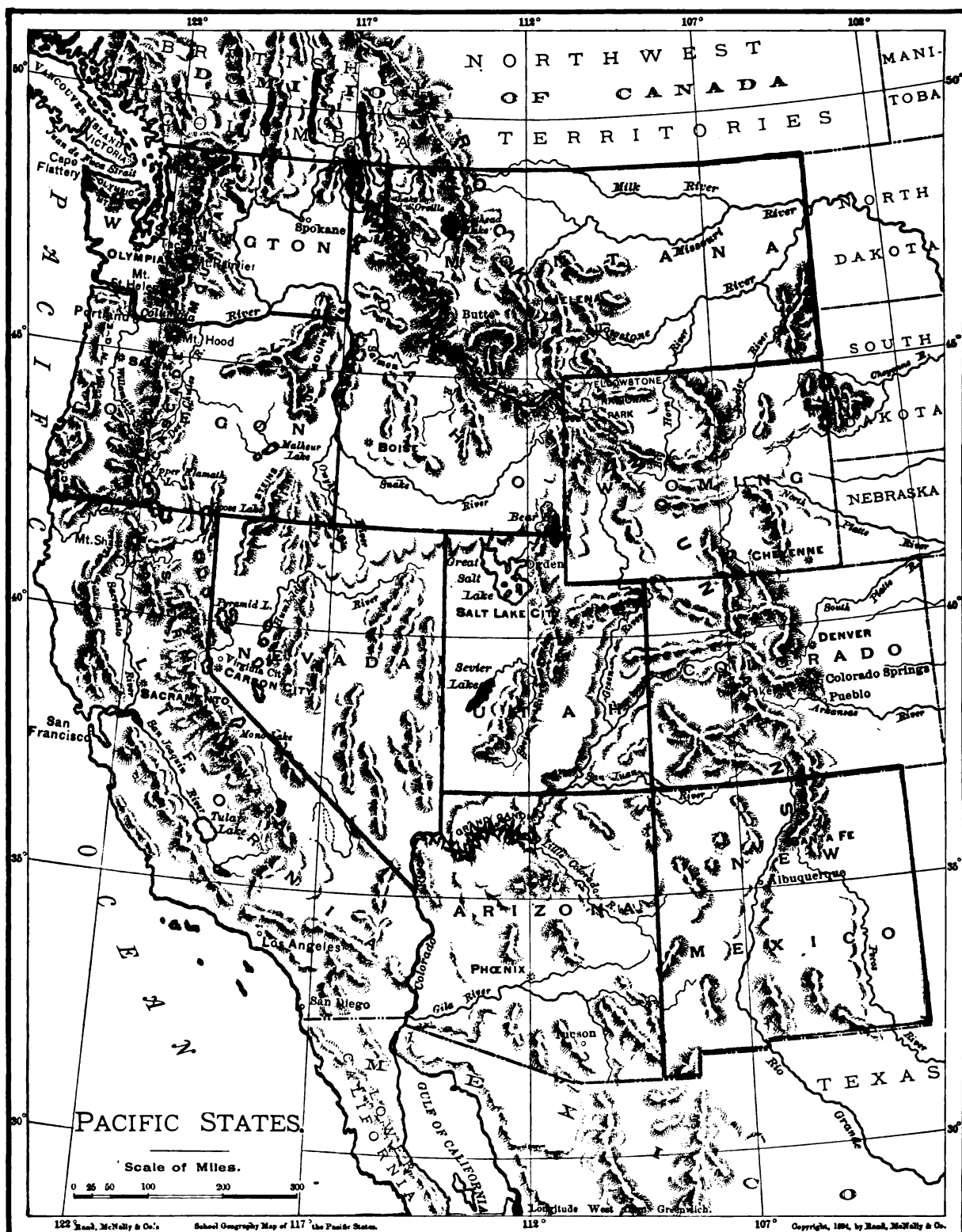
BURROS CARRYING WOOD, NEW MEXICO.

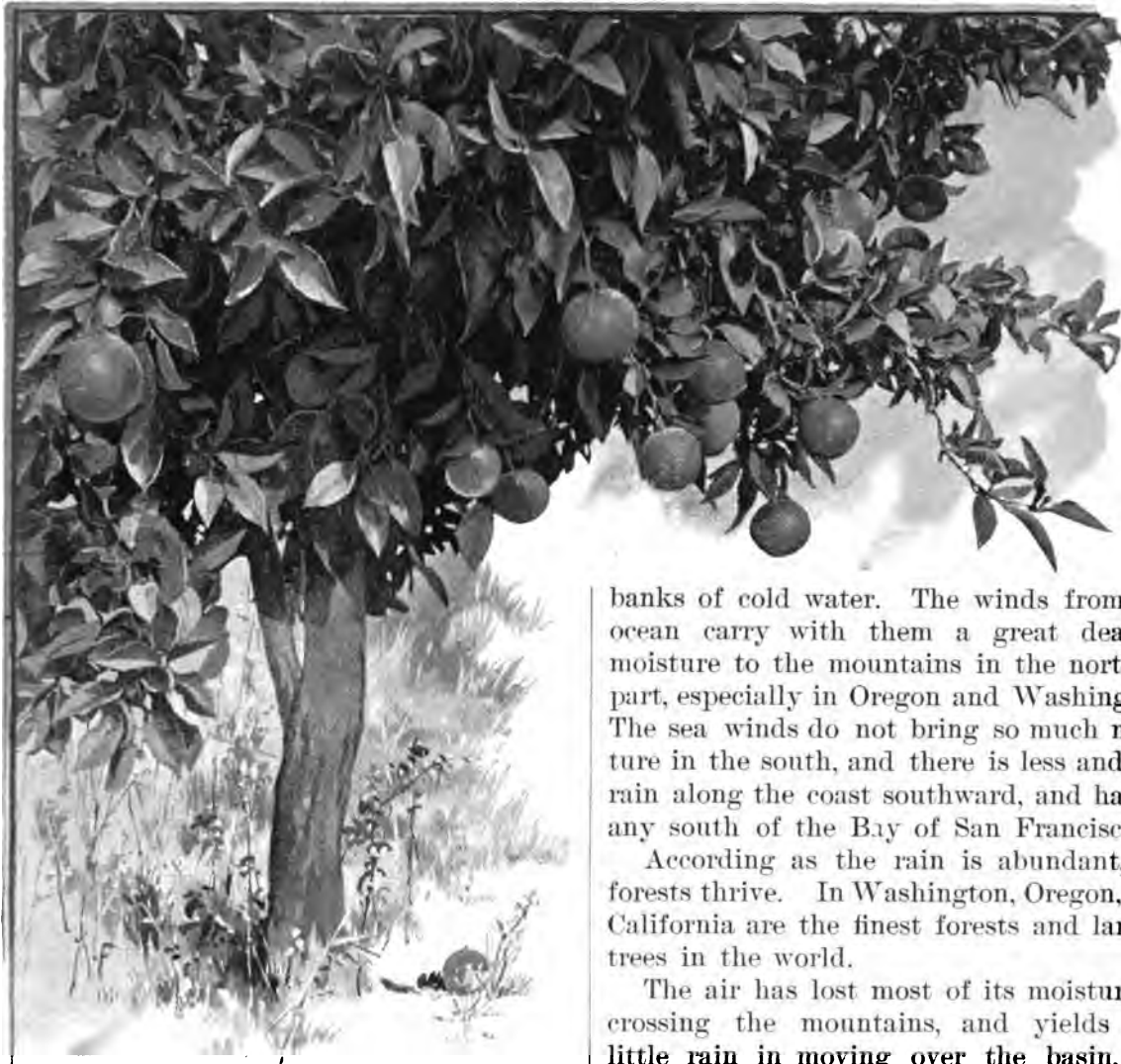
flow away in all directions. The water of the Colorado comes from both. Think how a cloud may drop its moisture as rain near Pike's Peak or the Yellowstone Park, so that while one portion of the water will reach the Gulf of Mexico another reaches the Pacific Ocean.

The rivers flow, generally, through narrow, rugged, rocky valleys. Sometimes they flow in deep gorges, called **canyons**, which they have worn in the rock.

Find on the map the part of the Colorado River marked Grand Canyon. Here the stream is a mile below the land surface. Notice how the Columbia River seems to cut through the ridge of the Cascade Mountains. The rocky walls on either side rise hundreds of feet, and over them fall beautiful cascades.

In Puget Sound are some good harbors, and the Bay of San Francisco is one of the best in the world. The narrow entrance to it is called the Golden Gate. The rocky islands here,





AN ORANGE TREE.

too small to be shown on the map, abound with seals and sea-lions.

The climate of the States on the Pacific Coast varies, and is peculiar. The great altitude gives this section coolness in summer, and the warm winds that come from the Japan Current in the Pacific temper its coldness in winter. This current is a great stream of warm water flowing from the torrid zone. It is hundreds of miles in width, and moves like a river between

banks of cold water. The winds from the ocean carry with them a great deal of moisture to the mountains in the northern part, especially in Oregon and Washington. The sea winds do not bring so much moisture in the south, and there is less and less rain along the coast southward, and hardly any south of the Bay of San Francisco.

According as the rain is abundant, the forests thrive. In Washington, Oregon, and California are the finest forests and largest trees in the world.

The air has lost most of its moisture in crossing the mountains, and yields but little rain in moving over the basin, except where it strikes some high mountains. There is too little rain in this basin for much forest growth. But on the western side of the Rockies, the remaining moisture in the air falls, and there trees are found, though not such as grow on the western side of the Cascade Mountains.

Over most of the Pacific States there does not fall rain enough for crops to grow, and farming is not followed, except where water can be made to flow on the land from streams. Where this can be done



TAKING SALMON, COLUMBIA RIVER.

great crops are gathered. Notice that in California there are two ranges of mountains with a long, north-south valley between them, and a river flowing from each end into San Francisco Bay. This is the Sacramento Valley. It is remarkably fertile, its land being farmed by irrigation from a very large number of streams. The commerce of this valley is the main support of the city of **San Francisco**, which has grown up at the harbor. It has an extensive commerce by sea with countries bordering on the Pacific, while railroads connect it with all the great cities of the Central and Atlantic States.

In some parts of the Pacific Slope, especially in Southern California, much attention is paid to the raising of fruit, such as grows in warm climates. Oranges, lemons, figs, olives, grapes, etc., are produced in great

quantities. Find Great Salt Lake on the map. It has no outlet and is extremely salt. A gallon of its water contains a quart of salt. Near it is Salt Lake City.

Throughout the Pacific Highland are many valleys and table-lands on which, notwithstanding the lack of rainfall, there is a scanty growth of grass. This grass supports great numbers of cattle, horses, and sheep, thus giving profitable employment to many people.

The chief industry in many parts is **mining**. The mountains are rich in the precious metals, copper, iron, and coal. In some parts there is an abundance of mineral oil. All of these States produce gold and silver, and some of them copper. Lead is found in several States, and quicksilver in California. Iron is common, but is not as yet mined to any great extent. Coal is known to exist in many localities, and is mined in several States.

Manufacturing is not a prominent business. Great quantities of lumber are made in the Northwestern States, however, which is shipped to various points along the coast and to foreign countries. In the waters

of the northern coast, valuable food fishes, such as cod and halibut, may be taken in great numbers. The rivers, from the Columbia north, abound with **salmon** of superior quality, which are taken in immense quantities.

The mountainous nature of, and the lack of rainfall over, much of this area will keep these States from ever being densely peopled except in the valleys.



PALISADES.



CAPE HORN, COLUMBIA RIVER.

LESSON 47.

Alaska.

For hundreds of years Alaska belonged to Russia, a great nation in Europe and Asia, to which the country on the other side of Bering Strait still belongs. But about thirty years ago the United States bought it from Russia, and it became one of our Territories.

It is a great peninsula, nearly nine times as large in area as New England.

Its southern coast consists of that mountain range which passes northward through the Pacific States. It is one of the most rocky and uneven in the world. Thousands of peaks project above the water, forming promontories and islands, which are shown on the map. They extend far out into the ocean toward Asia, forming the Aleutian Islands. Find them. They inclose Bering Sea.

North of the range forming the southern coast are other ranges parallel to it, with broad valleys between them. Rivers flowing westward follow these valleys. One of these, the Yukon, is known to be one of the great rivers of the earth, and is supposed to be as long as the Mississippi. The country lies so far to the north that a part of it is within the frigid zone, and consequently most of its harbors are ice-bound. But little is known of the interior.

The climate is severely cold, except along the southern coast. Here warm winds from the Pacific temper the cold so much that it is possible to raise some quick-growing vegetables during the short summer.

The same winds that bring moisture to Oregon and Washington convey still more to Alaska. Along the coast of the mainland, where are most of the islands, there

is more rainfall than anywhere else in the world, outside of the torrid zone.

The forest belt of Northern California, Oregon, and Washington also extends into Alaska. There is not much lumbering done, however, because of the very heavy undergrowth in the woods and the deep moss and peat, which cover the ground and hold water like a sponge.

Along the coast and on the islands the native Eskimos and Indians live, together with some Russians and Americans. There



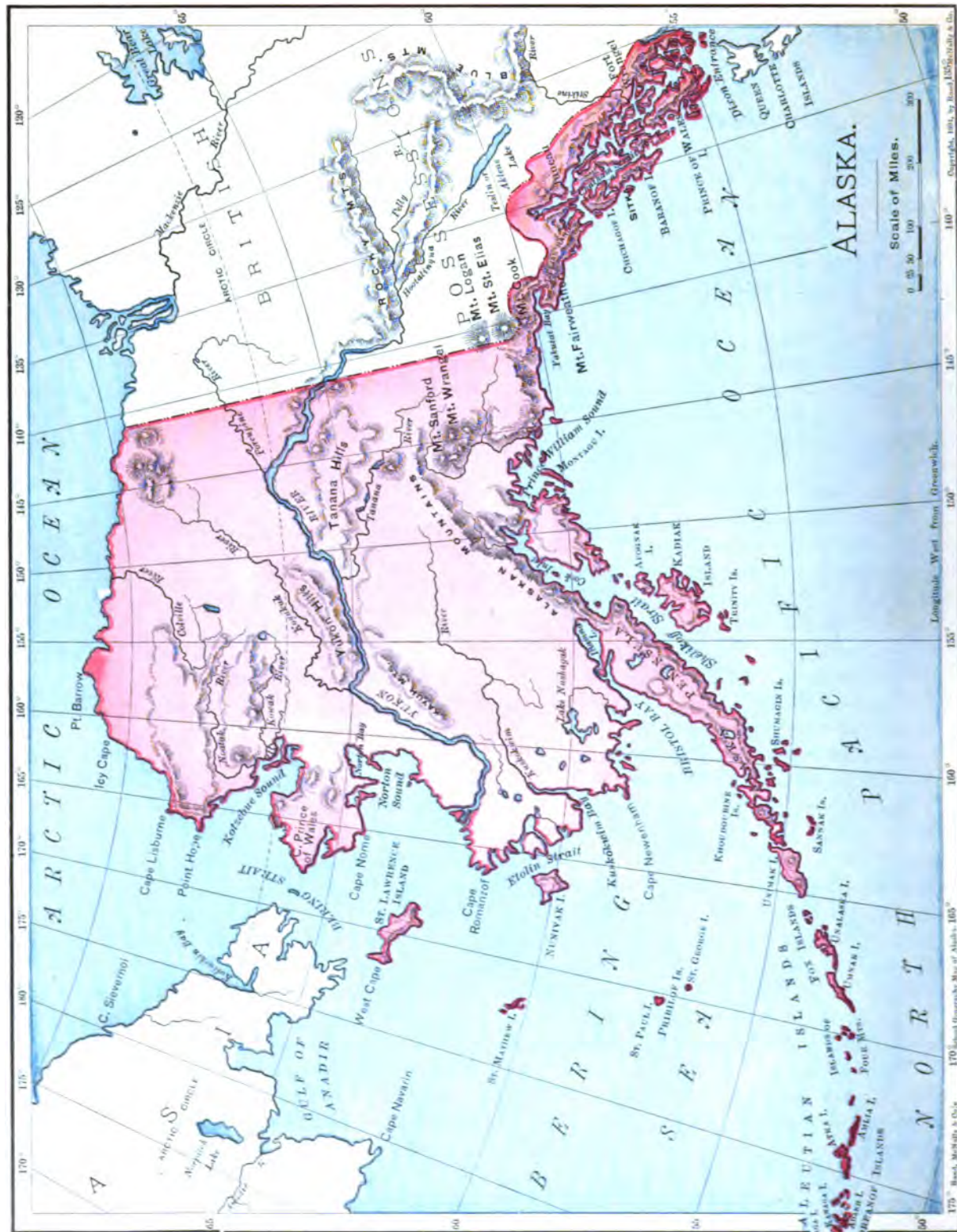
A SCENE IN SITKA.

are not 100,000 people in the whole Territory. Sitka, the capital, is a small town on one of the islands.

The capture of fur-bearing animals is one of the chief industries. Great quantities of salmon are taken, and shipped to market in cans, as is done in Washington and Oregon.

Minerals are abundant, but are not easily procured, by reason of the climate. Coal, iron, lead, and quicksilver have been found, and there are some very rich gold mines.

Find the Pribilof Islands. They were once the home of vast herds of fur seals, numbering millions, but, owing to unlicensed hunters killing the mother seals, leaving the young to die of starvation, there are now comparatively few left, and there is danger that, like the buffalo, the fur seal will soon be extinct.



LESSON 48.

British North America.

There were colonies in America subject to England which did not rebel against that nation at the time the thirteen colonies united to form the United States, and they remain subject to England to this



A MOUNTAIN SCENE.

day. Their territory forms that part of North America which lies north of the United States, except Alaska. It is in two parts, the Dominion of Canada and the Colony of Newfoundland and Labrador. The map given on the following page shows them both. The coast-line is irregular, and there are many islands. Many of the northern inlets would be good harbors were it not for the extreme cold.

The great Pacific Highland extends from our country into Canada so that that country abounds in beautiful mountain scenery. Among the ranges gold is found, both in the rocks and in the sand, which has been made by the wearing down of gold-bearing rock. Here, as in the United States, the gold seekers find the precious metal by letting water wash the sand down

through long troughs. The gold, being heavier than the sand, sinks down to the bottom in little cracks and is gathered.

The prairie region extends from our country into Canada, and there, as with us, the people engage largely in farming. They have vast fields which they plant with wheat. Here is a picture of such a field with teams plowing. Some fields are so large that the plows go as much as a mile without turning a corner.

This country is not so good as ours, because it lies farther north, and therefore has a colder climate. What ocean lies north of it? East? West? What great



FARMING IN MANITOBA.



WASHING GOLD.

bay lies within Canada? Where is the Gulf of St. Lawrence? What mountain system extends from our country across Canada, in the west? Judging by the course of the rivers, which way does the land of Canada slope, generally?

Most of the inhabitants dwell in the southeastern part, and the industries are much like those of the northern part of the United States. In the north the climate is too severe for farming or comfort, and but few people live there. Much of it is a great forest area, abounding in fur-bearing animals. Deer, elk, and other large game are found.

Before it came into the hands of Great Britain, Canada belonged to a nation of Europe, called France, and many of the people still speak French, though the pre-



vailing language is English. The government is somewhat like our own, but the people do not elect the chief officer, called the Governor-General; he is appointed by the government of Great Britain. Ottawa is the capital; Quebec, Montreal, and Toronto are



SCENES IN CANADA.

the chief cities. Find them on the map. What city has Canada on the Pacific Coast?

Off the coast of both Newfoundland and Nova Scotia there are great mounds, commonly called "banks," which rise like plateaus from the bottom of the ocean. Sea-plants grow in great abundance on these water-covered plateaus. Multitudes of cod are taken here by fishermen, who come in vessels from the United States and Europe, as well as from Canada.



LESSON 49.

Mexico.

While the English and the French were establishing colonies in the northern part of North America, at an early time, another nation, Spain—the one that discovered America—was establishing colonies within the southern part. Florida once belonged to Spain, and so did Texas and some of the Pacific Highland States. There still remain many people in some of these States who speak the Spanish language.

Mexico, which adjoins the United States on the southwest, was for a long time subject to Spain, but became independent of

that country, as our nation did of Great Britain. It is peopled by descendants of Spaniards and of the people who dwelt there when the Spaniards came. The Spanish language is spoken there. Many of the people are very ignorant, though some are highly civilized and refined. The carts and farming implements are of the rudest kind.

The latitude of Mexico is such as would naturally give it a very warm climate, but the country consists mainly of a plateau about a mile and a half high, which altitude gives it a cool climate. On the low, narrow, coastal plains the climate is torrid, but on

the plateau it is temperate, much like ours. Its range of climate from the lowlands to the highlands enables its people to cultivate the plants of both the torrid and temperate zones. In many places one can look upward from a valley filled with torrid zone plants to a mountain tipped with never melting snow. On the highland portion the raising of cattle and horses forms an important industry. Many hides for leather come to our country from this great plateau.

In Mexico, and the parts of our country that adjoin it, great numbers of cactus plants are found, some of which grow to a very large size. On these plants of Mexico live the insects which produce the brilliant dye known as carmine.

The government is, in many respects, like our own, the nation being composed of States. The capital is the City of Mexico. Find it on the map.



CACTUS PLANTS.

Is it in a highland or lowland part? What should be the climate of the city?

As the country is mountainous it contains many deposits of minerals. Vast amounts of silver have been taken from its mines, and gold and other metals are plentiful. Its exports are mahogany and other fine woods; also tobacco, sugar, coffee, fruits, vanilla, cocoa, etc.

Its eastern coast is low and sandy, and affords few good harbors. Vera Cruz on this coast is its most important port. Its western coast is abrupt and rocky, and has some excellent harbors.

One of the most important plants of Mexico is the maguey. You may have seen it growing in green-houses, where it is called the century plant, because it is supposed not to blossom until it is one hundred



A NATIVE WATER CARRIER.

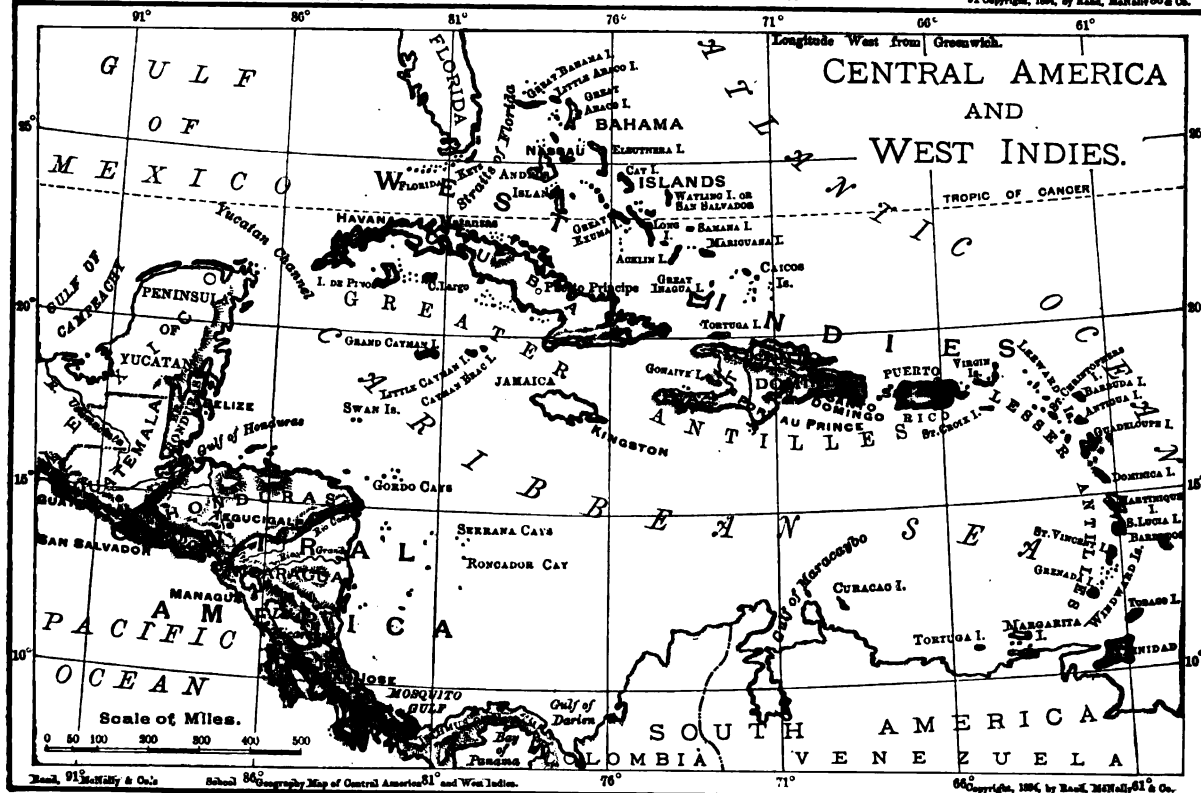
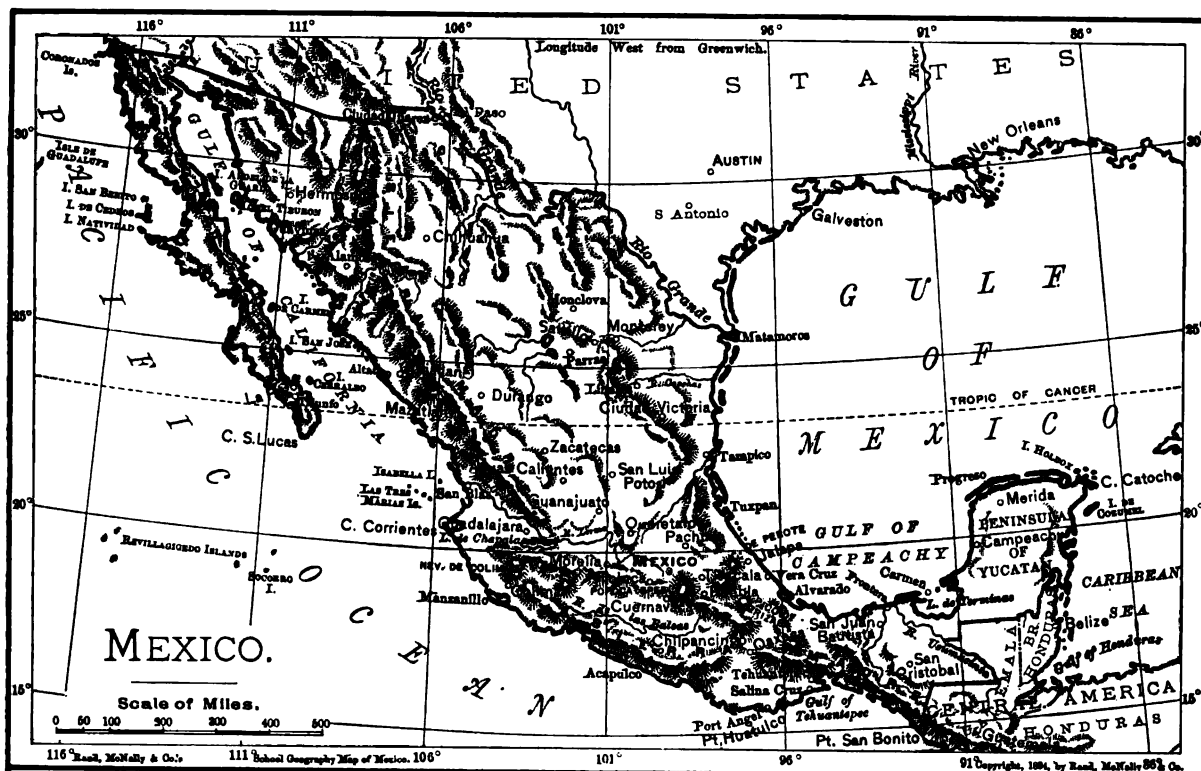


A MEXICAN CART.

years old. Really, however, it blooms in Mexico when about ten years old. At this age it shoots up from its thick heavy leaves a stalk which, in about a month, grows to be nearly thirty feet high. It bears hundreds of flowers, and then dies. When the stalk bud forms, the natives cut it out and gather the sap that collects where it grew. This is sweet and by boiling down yields sugar. From the sap is also made a kind of drink much used by Mexicans. The thread-like fiber of the leaves is used for making twine and ropes. Much of this fiber is brought to our country. It is an important article of commerce.

Observe in the picture, page 64, that the highland of Mexico is a continuation of our own Pacific Highland. Naturally the same industries that prevail in the highland with us, prevail there, except that the indolence of the Mexicans prevents as much business being done.

Name the long peninsula on the west. Name the long valley, between this peninsula and the mainland, filled with the water of the sea. What peninsula lies in the east? What gulf is partly inclosed by it, and of what great gulf is this gulf a part? What river forms a portion of the boundary between Mexico and the United States?



LESSON 50.

Central America and West Indies.

The narrowing portion of North America, between Mexico and South America, is occupied by several small independent countries, which, taken together, are called Central America. A small territory, called British Honduras, belongs to Great Britain.

The mountains which connect North and South America form the ridge of this country. They lie near the western coast, the main

of some 900 islands, formed by a mountain chain rising from the bottom of the sea. The chain incloses a part of the Atlantic Ocean so as to form the Caribbean Sea. Find those islands and that sea, in the picture of the Western Continent, page 47. Some of the smaller islands are of coral



A HARBOR IN THE TROPICS.



VOLANTE, A CUBAN CARRIAGE.

slopes extending eastward. The productions are much like those of Mexico, the leading exports being coffee, sugar, fruits, and fine woods.

It is probable that canals will be dug from the large lake in Nicaragua to the ocean on either side, so that vessels may pass through from the Atlantic to the Pacific Ocean.

Eastward of Mexico and Central America lie the West Indies, a group

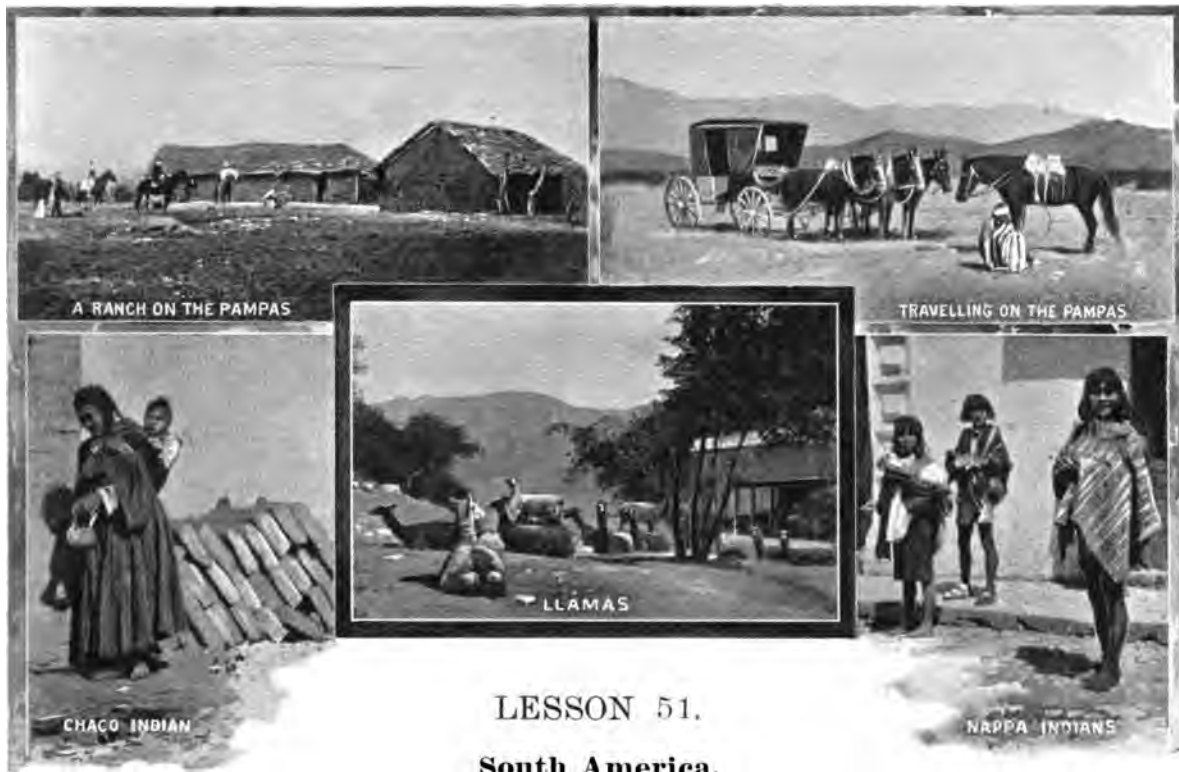
formation. The West Indies, like Mexico and Central America, were conquered and held by the Spaniards soon after the New World was discovered, but Cuba and Puerto Rico, with some smaller islands, are all that now remain subject to that nation.

North from the main group lie the Bahama Islands, one of which, San Salvador, was the first land discovered by Columbus.

The productions of Cuba and the other large islands are much like those of Central America. Sugar and tobacco are the leading articles, but tropical fruits are also grown. A large number of inhabitants are Negroes, the descendants of slaves originally from Africa.



COCONUTS.



LESSON 51.

South America.

Look at the earth picture on page 47, and tell in what direction South America is from North America. Find the equator on the map, and then notice where it must be in the picture.

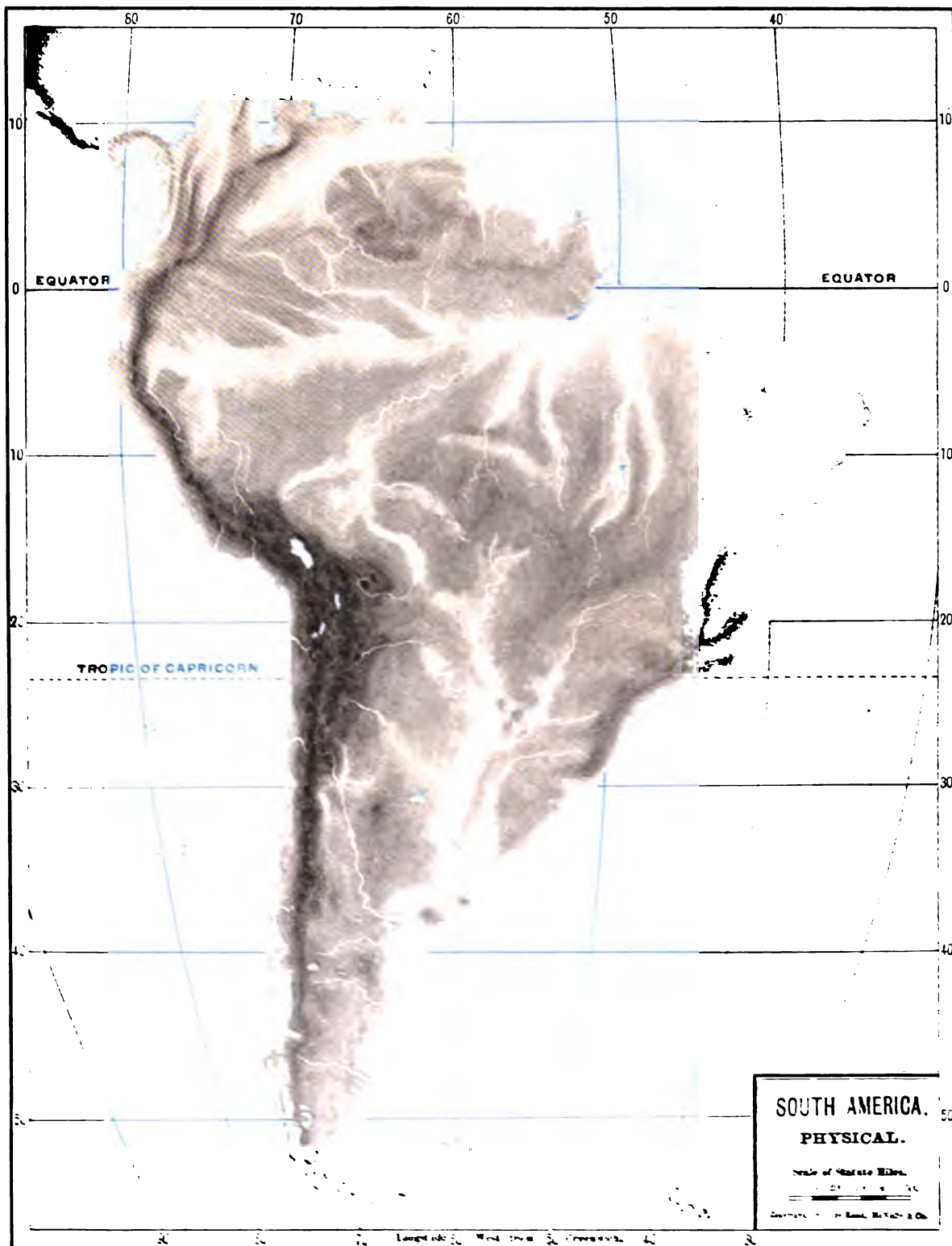
Notice those figures at the sides of the map, at the ends of the parallels. They tell how many degrees distant the lines are from the equator. It is 90 degrees from the equator to either of the poles. Heat and cold depend upon nearness to the equator. The line that is 10 degrees north or south of it is in the torrid zone. That which is 20 degrees from the equator is also in the torrid zone, but since it is farther from the equator, it crosses land and water where it is not quite so hot. The line of 30 degrees is still farther from the equator, and crosses where it is not very hot, and that of 40 degrees crosses where it is rather

cool. At the 50-degree line it is cold; at 60 degrees it is colder, and at 70 and 80 degrees it is colder still. Generally speaking the cold everywhere increases as the parallel figures grow larger, either way from the equator.

Turn back to the map of North America, and tell how you think the climate differs as one travels from Central America to Cuba, Florida, Philadelphia, Newfoundland, Hudson Bay, and Greenland.

About how many degrees from the equator is the south end of South America? What should the climate be there? What country of South America should have a climate much like that of the United States, because it is about the same number of degrees from the equator?

Notice that South America is shaped something like a wedge. In what direc-



tion does the point of the wedge extend? Which has the more bays, gulfs, peninsulas, and islands along its eastern coast—North America or South America? Where are most of the coast islands of South America? Look at that mountain system which extends from the north end of North America to the south end of South America. Where is it narrowest and lowest? On which side of both grand divisions are the greatest mountains? What is the system called in North America? In South America? Notice that in South America, as well as in North America, there is a highland in the eastern part; what is the name of it? A great valley extends through the length of the Grand Division, from north to south, between the eastern and western highlands. Notice, too, that the northern part of this valley drains, by rivers, northward and eastward, and the southern part to the southward, as in North America.

There is a Great Basin in South America much larger than the Mississippi Basin. It is drained by a river much larger than the Mississippi River. Find that river and basin in the picture, and learn the names on the map. This is the greatest river basin in the world.

Observe, on the map, that the equator crosses the mouth of the river. What is the climate in the Amazon Basin? After looking at the picture tell whether the land is low in the basin.

The warm winds blow from the warm

part of the Atlantic Ocean, westward across the great low basin, bearing the water they have taken up as vapor from the sea. So long as they remain warm, they keep this water, but at length they reach the parts where the land begins to rise, as you see in the picture, and as they keep on up the long slope they go higher and higher above the sea level, until at last they get up where it is cold.

When this happens, the moisture comes together in little drops, and these unite into larger ones, which are drawn to the earth by gravity, when heavy rains fall. For months at a time, almost every day, there are heavy rains on those slopes of the mountains which form the sides of the Great Basin. These rains cause rivers to form. Look and see where the rivers of the Great Basin begin and count them. Notice the course of each river in the Great Basin, from its source to where it joins another river, and how all these at length

bring their waters into one great stream, which flows into the ocean. The Amazon is the greatest river in the world. Think of the two great currents of water always passing—one of vapor in the air moving west, and the other of water in the rivers coming back. The country on these highland slopes is very rainy.

In the middle part of the basin, the land being very low, the rivers overflow during the wet season, so that the country for hundreds of miles is covered with water.



HARBOR OF RIO DE JANEIRO.



When this happens, the native Indians dwell in trees for months at a time.

It is so warm and moist in the Amazon Basin that the trees and other plants of different sorts grow very large, and so close together that it is hard traveling through the forests. Thousands of birds of numerous kinds, and many monkeys, dwell here. The valley is a very unhealthy country for white men, though the native Indians do not suffer. The white men dwell mostly on the cool highlands.

In the southern part of the Great Plain, some large rivers rise on the mountain slopes and flow toward the south, as you may see in the picture. You will notice that they all come together, thus forming one large river, although not so large as the Amazon. Look on the map and learn the name of this river. Into what ocean do nearly all the rivers of South America flow?

The southern part of the Great Plain has no mountains on the east, the eastward slope from the Great Highland reaching to the ocean.

Observe, by the picture, that the Andes Highland is much higher than the Brazilian one. It also exceeds in height the western highland, in North America. Some of its peaks are



IN THE ANTARCTIC REGIONS.

more than five miles high. It has many volcanoes. There are volcanoes along nearly the whole extent of the great American mountain system, in both North and South America.

Look at the southern end of the Andes, and see how the range extends into the sea, its peaks forming many islands. Its main ridge ends in a rocky cape, whose cliffs rise from the sea thousands of feet in height. The cape is called Cape Horn. On these islands and on the land bodies southward in the Antarctic region dwell great multitudes of a curious water bird called the penguin. In swimming it uses its stubby wings as a fish uses its fins. It can not fly.

What is the name of those mountains to the north of the Amazon Basin?

Look, in the picture, for the western slope of the great Andes Highland. Is it wide or narrow? Is it steep or gradual? The high peaks are from sixty to a hundred miles from the sea. Do you see many rivers there?

A strange thing happens on the western slope of the Andes, opposite to where so many rivers rise. The moist winds from the Atlantic are so chilled, while sweeping up the lofty mountains, that by the time they reach the top they have parted with so much water that none is left to fall on the other side, and consequently it seldom rains there. For hundreds of miles the country lying on the western side of the Andes is too dry for plants to grow.

Many earthquakes occur in the Andes Highland. Perhaps you would understand better what these are, if they were called earthshakes, for an earthquake is a quaking or shaking of the earth. These shakings sometimes destroy houses and open great cracks in the ground. One happened in Caracas, a city in the Andes Highland, over eighty years ago, in which the city

was destroyed and 12,000 people were killed. One in our country a few years ago destroyed many buildings in Charleston, South Carolina.

South America has much more hot country than North America. About two-thirds of its area is in the torrid zone. Consequently most of its vegetable products are from such plants as grow in hot climates. Coffee is one of these. It grows



THE COFFEE PLANT.

in the northern part of South America and upon the Brazilian Highland. It is a native of the countries which lie on both sides of the Red Sea, but many years ago white men brought the seeds to South America, and found that the plant would thrive there. Now hundreds of thousands of tons of coffee are produced in South America each year.

In the Amazon Basin are trees whose white sticky sap is collected by the Indians, and dried and smoked into a tough, elastic

substance, which we call rubber, from which overshoes, boots, combs, balls, and many other goods are made. Most of the hard buttons on men's coats and vests are made from a nut, called vegetable ivory, which grows in South America. In the forests of the hot region are many trees which furnish beautiful woods, such as mahogany, rosewood, etc., of which pianos and fine furniture are made.

Have you eaten tapioca pudding? Tapioca is a kind of starch made from the root of the manioc plant, which grows wild in the Amazon Valley. In the countries where it grows, it is the principal food of the people.

In the temperate zone portion are vast plains, upon which great crops of wheat and corn are grown, and where immense numbers of cattle, sheep, and horses are raised. Wool, tallow, hides, and horsehair for haircloth and mattresses come to us from these plains.

There is a shrub, in the temperate zone part, the leaves of which are used by the people as we use tea.

On the eastern slope of the Andes, from the equator to parallel 10° , grows a tree from the bark of which quinine, one of the most important medicines in the world, is prepared.

Gold and silver are found in the mountains, especially in the Andes. There are some rich copper mines there.

Brazil is the largest country. Most of its people are Indians, though there are many whites. It was settled by white men from Portugal, a country of Europe, and the language of the whites is Portuguese. The white people in nearly all the rest of South America speak Spanish, most of the country having once been subject to Spain.

Find in the picture the countries of **Venezuela** and **Guiana**. Describe the land there, with regard to its height.

Mention the countries which lie along the highland of the Andes. Which one lies upon the western slope, along the coast? What country lies on the opposite side of the Andes from that? What two countries of South America have no sea-coast? Where is **Uruguay**?

There are not many large cities in South America. In Brazil, the city of Para is the point where rubber, fine woods, and other goods from the Amazon Basin leave the country for various parts of the world. Rio de Janeiro is the most important city. Great quantities of coffee are exported from there.

Montevideo and Buenos Ayres are great shipping points for such goods as come from the temperate zone portions of South America. Where are they?

Valparaiso is the chief shipping point of that long, narrow country on the west. **Chile**, which is a mountainous country, sends to other countries minerals, especially copper and silver. It also ships wheat, which grows in the southern section, where rains come from the Pacific.

South America has not been settled by the white race in that thorough way in which North America has been, and consequently it has fewer cities, railroads, and other things common to civilized countries. The native Indians, like those of North America, do not take kindly to civilization,

and what progress is made is due to the white people.

Into what ocean do most of the rivers flow? Where is the Orinoco River? Its basin seems to join that of the Amazon. During the wet season boats can pass from it to the Amazon through a small stream which then connects the Orinoco River with the Rio Negro. What large river

drains the southern portion of the Great Plain? How many countries are there in South America? Commit to memory the names of all the countries.

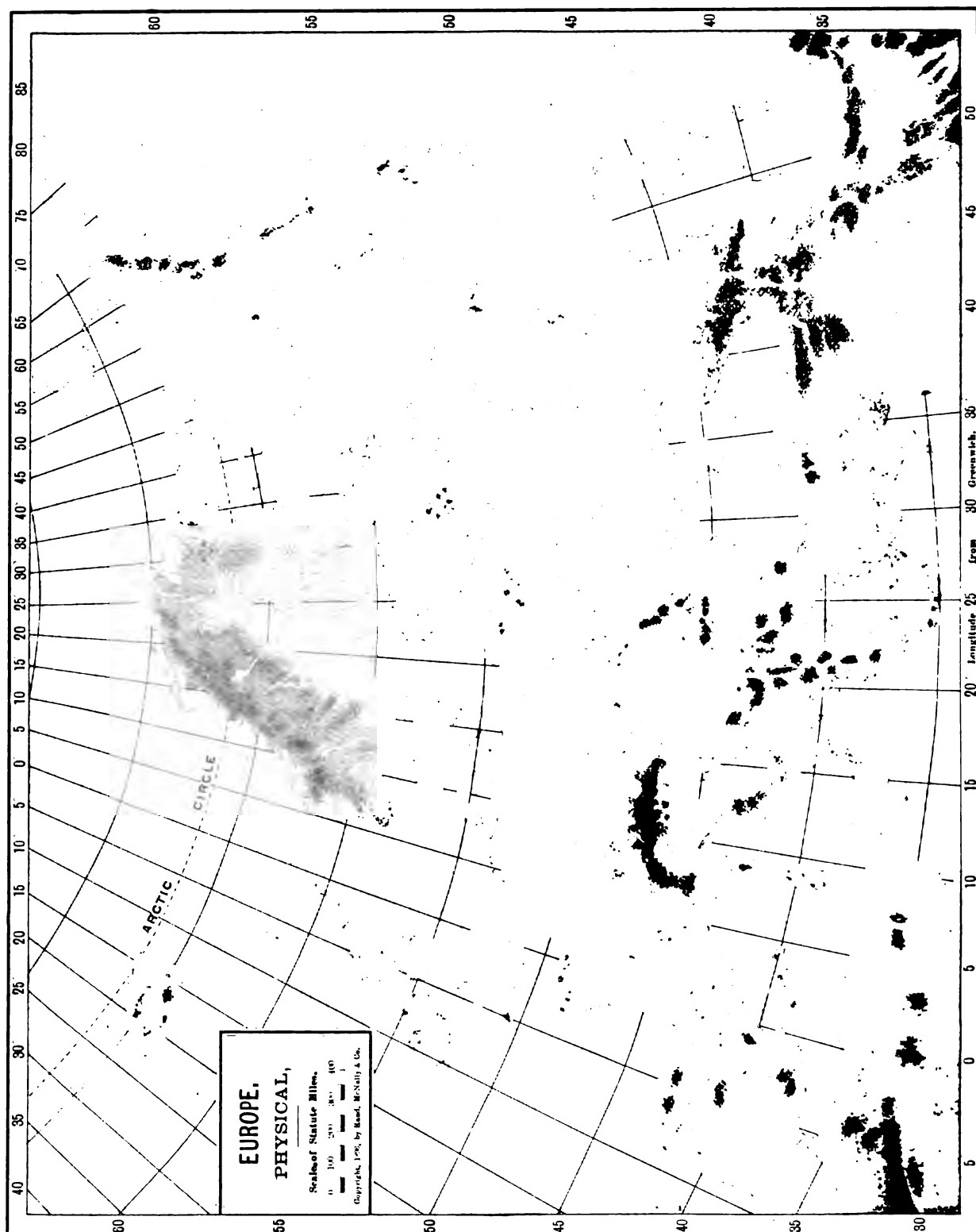
Find a small tract which belongs to the British, Dutch, and French.

The principal exports of **Peru** are cotton, sugar, and silver. Callao is the chief port. **Bolivia** contains rich silver mines. Cocoa and cinchona are very important products. **Ecuador** is rich in minerals and petroleum. The principal



TREE FERNS.

product is cocoa. **Colombia** contains the important ports of Panama and Colon, which, being united by railway, connect the Atlantic with the Pacific Ocean. In **Venezuela** many cattle are raised. The chief products are coffee, cocoa, and hides. **Paraguay** is principally an agricultural country. The chief export is maté, or Paraguay tea. **Argentine Republic** is very progressive, and has an extensive trade in the markets of Europe and with the western part of the United States.



LESSON 52.

Europe.

Europe is a Grand Division, forming a portion of the Eastern Continent. The range of mountains in the northeast forms the main dividing line between it and the Grand Division of Asia. As may be seen from the picture, the southwestern portion is very mountainous, with many valleys between the ridges. In the south, between the mountains of Europe, and those of Asia and Africa, which are related to each other, lie deep valleys which have been filled by the water of the Atlantic, and have thus become seas. Find the Mediterranean Sea, and the place where the water runs into it from the Atlantic. What is that strait called? Find in the picture some

one of these, the Bosphorus, is the famous city of Constantinople, one of the oldest of the European cities. In what country is Constantinople?

Find the Caucasus Mountains, both in



mountains, which rise from the bed of the sea, forming islands. Learn their names from the map. Find a great mountain chain which forms a peninsula in the Mediterranean. Of what country is that peninsula a part?

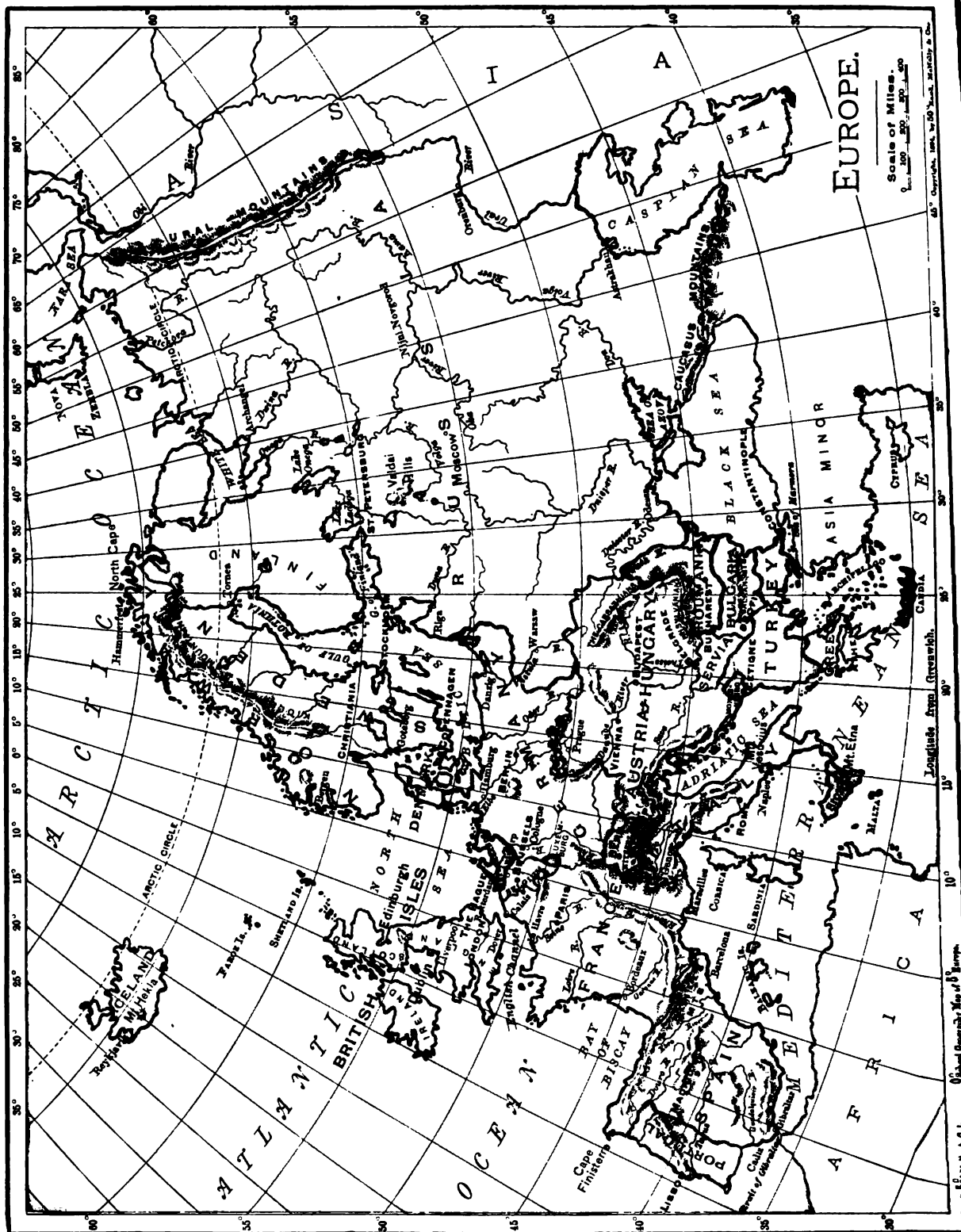
Find the Black Sea in the picture. Find the straits by which it is entered. On

the picture and on the map; the Caspian Sea. The Black and Caspian seas and these mountains separate Europe from Asia on the south.

You notice rivers flowing into the Caspian Sea, but you find no place where water flows out, all that leaves it being taken up by the air. This has been going on for so long a time that the salt brought by the rivers has made it a salt sea, like Great Salt Lake in our country, except that the Caspian Sea is many times larger.

Notice that great peninsula in the picture, in the northwest, with a mountainous outside coast. See by the map what countries this peninsula contains.

Learn from the map the name of those large, partly mountainous, islands in the west. What sea lies between these islands and the mainland? What large bay lies north of Spain? Observe by the picture that the greater part of Europe is a vast plain nearly surrounded by mountains.



EUROPE.

Scale of Miles.
0 100 200 300 400

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LAPLANDERS AND REINDEER.

Those in the northeast are the Ural Mountains. The Caucasus Range is in the south. The mountains of Europe lying south of the plain are the Alps, famous for their scenery. Name the ridge extending westward along the north coast of Spain.

The mountains of the British Isles and those of Norway lie on the west of the Great Plain. Between them and the mainland, much of the plain lies so low as to be covered with water. The water-covered portion forms the Baltic Sea, the North Sea, and the English Channel. Find them in the picture, and their names on the map. Between the mountains of Italy and those of Austria-Hungary, lies a sea-filled valley called the Adriatic Sea. Find it in the picture and on the map.

In countries bordering upon the Mediterranean Sea the highest civilization of the white race began, and this part of the earth was known and mapped before any

other. Columbus was a native of Italy, and sailed from Spain to find the New World. Find Italy and Spain.

Though it contains many nations, Europe is but little larger in area than the United States. It is very densely populated, and much of its commerce reaches the Atlantic through the Strait of Gibraltar. From the Mediterranean countries, through this strait, we receive vast quantities of oranges, lemons, prunes, olives, olive oil, wine, sardines, cork, and silk. Notice that the parallel 35° passes very near the Strait of Gibraltar. Look for that parallel on the map of the United States, and observe that the States which it crosses are in the same latitude—that is, the same distance north of the equator—as the Mediterranean Sea. By this comparison you may also see that Maine, and Oregon, and the Great Lakes are in the same latitude as France and Austria-Hungary.

The **British Isles** consist of the large islands of Great Britain and Ireland, and many smaller ones near them. Great Britain contains England, Scotland, and Wales. These three countries, with Ireland, com-



LAND'S END, ENGLAND.

pose **The United Kingdom of Great Britain and Ireland**. The nation is frequently called the English nation. Most of the early settlers of our country came from the British Isles.

The islands are irregular in shape, and have many good harbors. The people more than any other nation are engaged in commerce. They send manufactured goods to our country, and from it they obtain farm products, petroleum, etc.

The British Isles are farther north than the northern part of our country, yet their climate is much milder. This is because the winds that cross them come from a great area in the Atlantic where there is a current of warm water flowing from the

torrid to the frigid zone. These winds make the western part of Europe much warmer than it would otherwise be. This current is called the **Gulf Stream**, because it comes from the region of the Gulf of Mexico. It flows near the northern part of Norway, and makes Hammerfest nearly as warm in winter as Boston.

The British Isles include a mountain chain, which extends north-south along the western part of Great Britain, with branch-



HIGHLAND CATTLE, SCOTLAND.



AN IRISH JAUNTING CAR.

ing spurs in Ireland, separated from the main chain by a deep valley filled by the sea. The most western point of England is Land's End.

The scenery throughout the British Isles is beautiful. The islands have been occupied for many centuries by a progressive people, and are densely populated. London, the chief city of England, has more people than any other place in the world. Edinburgh is the chief city of Scotland, and Dublin of Ireland. The English nation controls many other countries, the whole together making the British Empire greater in extent than any other.

One country occupies the eastern part of Europe, and is about as large as all the other countries of this Grand Division together. It lies within the Great Plain.

Find its name on the map. Find the Valdai Hills. Notice how rivers rise near these hills, and flow in various directions. This shows that there is in the plain a high point from which the land slopes in all directions.

Russia is a great nation which extends past the Ural Mountains into Asia, where it covers a larger area than it does in Europe. It can not use the bays on the north for harbors, because of the cold in that latitude, and the harbors of the Baltic Sea can be used only in the warm season. Ships sail from Russian Black Sea ports at all seasons. From the great prairies, or **steppes**, in the south of Russia, wheat is largely sent to other nations. Sometimes the Russians sell their wheat at so low a price that the farmers of our country can not get good prices for their crop, in Europe.

Great quantities of corn are also raised in the southern part of Russia. It is not common in Europe for this grain to be cultivated, and it is unknown to millions of

the people. A great amount of rye is produced in Europe, and much of the bread eaten by the people is made from it.

Norway and **Sweden** are two nations

under one king. Norway, on the seaward side of the peninsula, is very mountainous; but Sweden, on the east, slopes more gradually, and has thousands of lakes. The most northern town in the world is a Norwegian one; it is Hammerfest, and lies in the frigid zone. The people in the northern part of Norway and Sweden have short seasons, yet they do some farming. They are largely engaged in lumbering and fishing. Stockholm and Christiania are the chief cities. There are many people in America who came from Norway and Sweden, and they are among the best immigrants that come to our country. They are generally very light in complexion and color of hair, strong and hardy, of good education, and very industrious.

In the northwestern part of Russia and in the north of Norway and Sweden dwell the Laplanders or Laps, a hardy race. Instead of horses, cows, sheep, etc., these people have tame reindeer, which draw their sleds and furnish them with milk.





THE STORK.

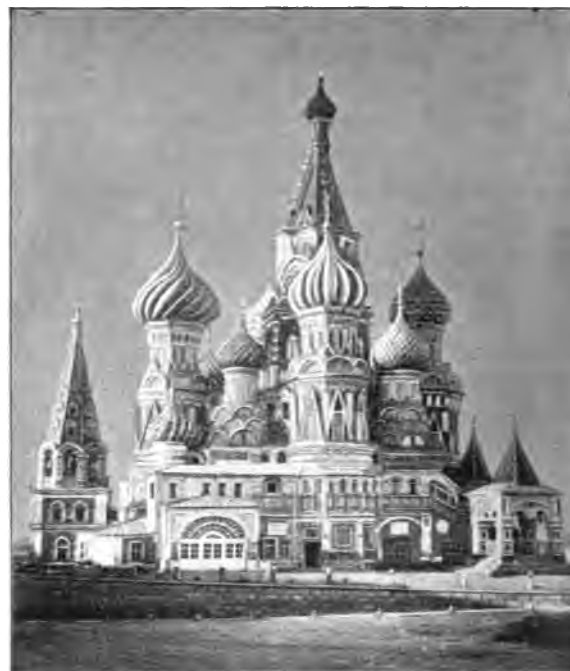
East from England, and south from Norway and Sweden, lies **Denmark**, where the Danish people live, who in many respects are like those dwelling north of them. The country consists of a peninsula and some islands, all of which are part of the low plain of Europe. Copenhagen is the chief city.

There is a country east of England called the **Netherlands**, where the Dutch live. It was formerly called Holland. Nether means low, so the name means lowlands.

The land lies even lower than Denmark. In some places it is so low that it would be covered by the sea but for dikes, which have been built by the inhabitants to keep the water back. Some of the embankments are sixty feet high. On these dikes are many great windmills which move pumps to throw the water of the rainfall over into the sea, the land being too low to afford a slope for drainage. There are no mountains nor rocks in the Netherlands; all is soil and sand. Some of the sand hills are 100 feet high.

The Dutch have been a seafaring people, but are now much engaged in manufactures. Their machinery is moved by windmills. Amsterdam is the most important city.

The people of these countries have a quaint custom of permitting



A GREAT CATHEDRAL, RUSSIA.

the stork to build its nest on their house-tops. Hundreds of these great birds come in the spring and rear their broods, and then in the fall fly south to Africa.

There is a great valley inland from Denmark and Sweden, which has been partly filled by the ocean. The water-filled portion of this valley is called the Baltic Sea; with the neighboring straits, it affords many harbors for an extensive commerce.

Belgium is a small country, mostly flat and level, although it has some low mountains. It is very densely inhabited by an industrious people. Mining and manufacturing are the chief industries. Flax and beet sugar are prominent products.

Brussels and Antwerp are the largest cities.



SCENE IN HOLLAND.

Germany lies upon the Great Plain, and slopes generally northward from the mountains which bound it on the south. It is one of the most important countries of the world. It is thickly populated by



IN THE AUSTRIAN ALPS.

an enterprising and industrious people. The inhabitants are occupied with agriculture, manufacturing, and mining. The productions of Germany are much like those of the eastern part of our country. The people are very intelligent and well educated. Berlin is the principal city; Hamburg is the most important port of Europe outside of the British Isles.

Austria-Hungary is composed of two nations united under one emperor. Its sea-coast is upon the Adriatic. Through what strait must its vessels pass to reach the Atlantic Ocean?

The land slopes toward the southeast, the most important river of its drainage being the Danube. This is one of the largest rivers in Europe, and navigable for good-sized boats. Upon it are situated Vienna and Budapest, the leading cities.

Much of this country is mountainous, the interior being a great valley. Into

what sea does it drain? The climate varies with the altitude, ranging from very warm to cold.

Agriculture forms the leading industry, although mining and manufacturing are important.

France is the most important republic of Europe. Most of it lies within the plain, but in the east and south it is mountainous. What mountains separate it from Spain? Its drainage is mainly to the west, though the beautiful Rhone Valley drains south into the Mediterranean. Its capital, Paris, is one of the leading cities of the

world. Agriculture and manufacturing are the important industries of the people. We obtain many fine silks and other beautiful goods from France. Lyons leads the world in the manufacture of silk. Havre is the seaport of Paris, but Marseilles is



A CASTLE IN GERMANY.



ON THE MEDITERRANEAN, FRANCE.

the most important port of the country.

During the war, which finally made our country a nation, we were at times very near defeat, but the people of France came to our aid and helped us to secure independence.

Switzerland is a mountainous country, and contains the highest peaks in Europe. The scenery of its mountains, lakes, and valleys is more romantic and beautiful than that of any other country.



ON THE COAST OF SOUTHERN ITALY.

It is a small country, bordered by four great nations, France, Germany, Austria-Hungary, and Italy. It has no language of its own, those of adjoining countries being spoken, chiefly German and French. Some of the principal rivers of Europe rise in the Swiss Mountains, and are fed by the melting snow and ice of the glaciers.

The mountains are not mineral-bearing like those of Spain, Germany, and England, and the altitude is too great for agriculture. The production of cheese and milk, and the manufacture of silk goods, clocks, and watches, and wood-carving are the chief industries. Geneva and Zurich are among the chief cities. One profitable



PALERMO, SICILY.

business of this country is entertaining the people who visit its beautiful mountains and valleys.

Italy is mainly mountainous, and varies greatly in climate because of the difference of altitude between the lowlands of its valleys and coast, and its mountains. The famous Valley of the Po, in the northern part,

is one of the finest agricultural areas in Europe; it produces chiefly rice and other grains, including corn. There is much forest growth on the mountain slopes, the chestnut being a specially valuable tree on account of its fruit.

Italy is famous for its history, and its beautiful sea and mountain scenery. The Bay of Naples and the city of Venice are attractive points for travelers to visit.

Rome, the capital, is the most noted city. It was the seat of government of the old Roman Empire, that controlled much of the world known to the ancients.

Sicily is a part of the Kingdom of Italy. Palermo is its chief city.



GRAND CANAL, VENICE.



A PALACE IN SPAIN.

Spain, because of its mountainous nature, is rich in minerals, but the people are less enterprising than those of some other European countries, and have not improved the home opportunities for industry so much as the English or the French. The chief occupation is agriculture. We receive from Spain tropical fruits, wine, cork, and olive oil. This country at one time had many possessions in the New World, and acquired great wealth from them, but nearly all have been lost. Madrid is the most important city.

Portugal resembles Spain in many respects. The language, habits, industries, and productions are quite similar. Lisbon is the principal city.

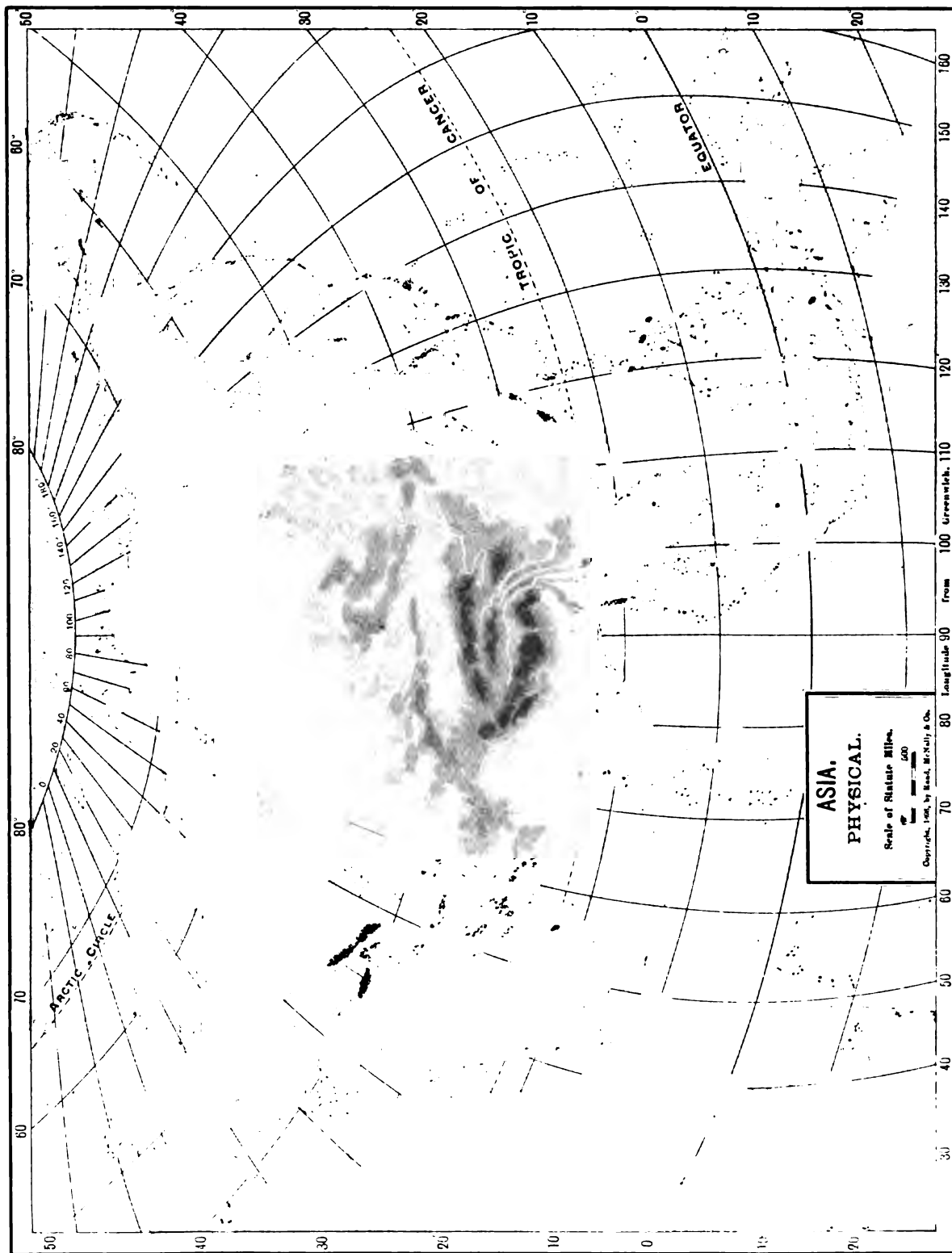
Greece is a small nation south of Turkey, celebrated in history as being, in early times, the center of art and literature. The country was then larger and more powerful than now. Athens is the chief city.

Turkey borders on the Mediterranean and Black seas, and, like Russia, extends into Asia. The straits through which the great commerce of the Black Sea countries passes, to reach the world, are in Turkish territory. Constantinople, the chief city of Turkey, is built on the Bosphorus. People of the yellow race form the ruling class in Turkey, and its civilization is low. It is badly governed, and is not prosperous, considering its natural advantages.

Between Austria-Hungary and Turkey are a number of small countries shown on the map. They resemble Turkey in natural features, and some of them, like that country, are badly governed.



CONSTANTINOPLE AND THE BOSPORUS.





SCENE IN THE HIMALAYAS.

LESSON 53.

Asia.

Asia is one of the three Grand Divisions of the Eastern Continent. It is also the largest in the world. Excepting some of its islands it lies entirely north of the equator. Its southern part is in the torrid, and its northern part in the frigid, zone.

Within Asia are the highest mountains of the earth. By looking at the picture you may see that the mountains of Europe are continuations of those of Asia; by looking at the map you can see that the Great Plain of Europe extends into Asia, where it includes a larger area than in Europe. This plain forms a part of the Russian Empire, and the Ural Mountains rise like a long wall upon it, the land being low on either side.

You may observe one difference between the European and the Asiatic parts of the Great Northern Plain. In Europe much of the drainage flows south; in Asia it all flows north. The northward-flowing rivers of Asia drain a country which would be

one of the richest in the world, if the climate were not so cold.

In the highland part, which is shown in the picture, the climate is temperate, except in the most elevated parts, where the high altitude makes the weather very cold nearly all the time.

In the southern part the climate is warm, on the slopes of the Himalaya Mountains, and is very hot near the seashore.

Notice that several large rivers flow eastward into the Pacific Ocean. This shows that there is an eastern slope. The picture shows that here are great plains. Their climate is temperate, and the land fertile; and here, and in the valleys of the rivers flowing south, is found the densest population of the globe. More than one-half of the people of the earth live in these Asiatic lowlands. North and east of the great mountains dwells the yellow race, and south of them the white race, though not so white as that which inhabits Europe and America. Where is the Arabian Sea? What sea near it is called a bay? Where is the China Sea?



From the mountains, toward the northern coast, extend great forests, in which the trees grow smaller and smaller as the coast is approached, until the country becomes so cold that they disappear entirely, and only shrubs and mosses are seen. Here are immense swamps, hundreds of miles in extent, called **tundras**.



PEARL FISHERIES.

The vast plateau shown in the picture is called the Plateau of Thibet. It is the highest plateau in the world, being nearly three miles above sea level. One of the mountain peaks, Mount Everest, is about five and one-half miles high.

Find the Caspian Sea. It is strange that both the highest land of the earth and some of the lowest should be found in Asia. The Caspian Sea is much lower than the level of the ocean, and so too is much of the land around it. If a canal should be dug from the ocean to that sea, the water that would flow in would make the sea far deeper than it is, and about twice as large. Find a sea and a lake east of the Caspian which have no outlet. Both are salt like the Caspian.

As the shading in the picture indicates,



these inland seas lie within a great basin. Within this basin there are steppes, or prairies, upon which cattle graze much as they do on the plains of our own country. The Euphrates flowing through a large region in Asiatic Turkey is the chief source of drainage into the Persian Gulf. In this gulf and along the coast of India are extensive pearl fisheries for centuries known as among the finest in the world. The picture shows the method of diving for these gems, many hundreds of men being employed in the industry.

At the head of the Bay of Bengal and of the Arabian Sea, as you may notice by the picture, there empty some rivers which drain the opposite ends of a great valley. These have made much land at their mouths by bringing down silt in their currents. Each has a delta, larger



WASHING ELEPHANTS.



TOMBS NEAR GOLCONDA INDIA



TEMPLE AND ROYAL SEPULCHRE INDIA.



TAJ MAHAL, INDIA.

for thousands of years. The amount of rainfall in Asia varies in different parts. In the south, the air deposits its burden of moisture on the southern slopes of the mountains, and most of it runs back toward the ocean from which the winds come. The rivers flow south or east from the Great Plateau. Not much rain falls on the northern part of the plateau, as the air has lost most of its moisture

before it passes the divide, but what does fall drains off in rivers which empty into lakes that have no outlet.

North of the Thibetan Plateau is another plateau much less elevated, known as the **Great High Plain**. Here it is extremely cold in the winter and very hot in the summer. So little rain falls that there is scarcely any plant life, and there are great barren areas called **deserts**. A desert is a great tract of country, usually a plain, which for lack of rainfall contains little or no plant life.

The Great Northern Plain and the Thibetan Plateau are mainly too cold, and the Great High Plain too dry, to be very

than that of the Mississippi. Observe that on the east of the Grand Division, rivers flow into the Yellow Sea, each running through lowland which it has made by bringing down earth. The valleys of all these rivers are very fertile, and have been inhabited



STREET SCENE IN A GREAT CITY, INDIA.

well adapted to human existence; so all are sparsely peopled, and those who dwell there do not rank high in civilization. Most of the rest of Asia is well suited to human life, though the greater part of Arabia is desert.

The history of Asia goes further back than that of any other grand division. The people were skilled in many of the arts and sciences of civilization long before those of Europe were, but, with the single exception of Japan, they have not advanced for two thousand years, while the white race in Europe and America has been continually gaining. Therefore the former are very far behind the latter in knowledge and power. In many parts are temples which, because of their size, richness,

and beauty, rank among the wonders of the earth.

Find **India** on the map. Observe that it is called **British** India. This is because the country has been conquered, and is now held as a part of the British Empire. Though it looks small upon the map it is nearly half as large as our whole country. The natives are called **Hindoos**. They belong to the white race, but are very dark-skinned. They number nearly 210,000,000 and dwell mainly on the lowland drained

by the Ganges. There are many English people in India, engaged in agriculture and commerce. Most of them dwell in the highland portion, as the valleys are unhealthy for Europeans.

The natives follow agriculture as a busi-



HONGKONG, CHINA.



STREET SCENE, COLOMBO, CEYLON.

ness. Their work is done mostly by hand, though they train the native buffalo and elephant to be beasts of burden.

Calcutta is the most important city. It has a good port. Boats go up the Ganges from it nearly 1,000 miles. India sends

wheat, cotton, rice, and great quantities of tea to the markets of the world. Much opium is made there from the poppy. Precious gems are found in various parts.

Many valuable woods grow in the forests. Among these the teak is important for lumber, and the rubber tree for rubber. On the plains grow rice, cotton, and sugar cane, on higher ground corn, wheat, barley, etc. Tea and coffee are raised in large quantities. In some of the warmer parts pepper and other spices are grown.

The British have made many improvements. Railroads have been built, and canals for commerce and irrigation. Silk, cotton, and woolen-goods and some metallic wares are manufactured.



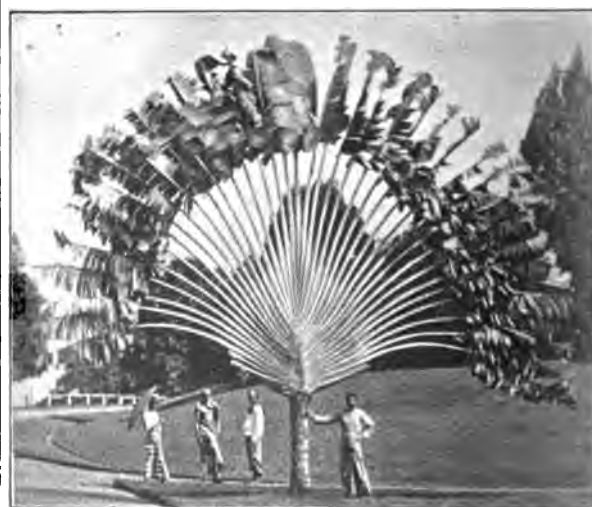
A NATIVE CART. CEYLON.

South of India lies the island of **Ceylon**. This was once a great coffee-growing country, but that industry has now declined and tea raising has taken its place. Cinnamon and other spices are exported, and cocoanuts grow freely along much of the coast. Colombo is the chief city.

Persia, a country adjoining Turkey, is very hot near the coast during the greater part of the year, and on the plateaus extremely cold in winter and hot in summer. Most of the cereals, rice, and sugar cane are grown. Drugs, dye-stuffs, and silks are exported.

Turkey extends from Europe into Asia, and includes Syria, the country in which the Christian religion began. This portion of Asia was in ancient times inhabited by a powerful people which

is proved by its ruined cities.



TRAVELERS PALM.

The Chinese Empire is a country much larger than our own. Comparing it, as it appears on the map, with the picture of Asia, you will see that it covers much land that is not good for man's occupancy, such as the Plateau of Thibet, etc. But the valleys of those rivers which flow east, and the land that they have made during thousands of years, are very fertile, and swarm with people of the yellow race.



A CHINESE WOMAN OF RANK.

There are even more people here than in India. Steamers go hundreds of miles up the rivers into the country, bringing down the goods which are to be exported.

There are mines of iron and other metals, including gold, and coal is abundant in some parts, but the people are not progressive, and do not avail themselves of the wealth which nature offers. Canton, Peking, and Shanghai are the chief cities.

On the south coast is a small island, on which is situated the British city of Hongkong. This is the great commercial city for the Chinese trade.

The Chinese Empire is the oldest nation on the earth and has the greatest population. Many hundreds of years ago it led the world in knowledge, but it has made little or no advance in modern times, so that the civilized nations of the world have left it far behind.

The people are of different classes; some are very poor and others wealthy.



CHINESE STREET RESTAURANT.

Among the higher classes it is customary in some parts to bind the feet of baby girls so as to prevent their growth, small feet being thought a mark of gentility.



BAMBOO.

In other parts, long finger-nails are thought to be aristocratic and it is common to see people wearing protectors to prevent the nails from becoming broken. Leather is not much used for shoes, they being made generally of cloth, with bottoms of wood or straw.

The people are engaged principally in agriculture, and they are so numerous that it is necessary to make every little patch of land produce food of some kind. Most of the hills in the fertile parts have been made into terraces for planting. In the cities many people dwell in house-boats which are fastened to the river banks.

Rice is the principal grain, and is the chief food of the people. Silk is produced



TEA PLANTATION.

for export. The worms which spin the cocoons or silk fiber are fed on leaves from the mulberry tree, many thousands of which are cultivated.

Tea is one of the leading crops.

Great quantities are used at home, but vast amounts are sent to other countries. It is very

interesting to watch the picking of the leaves from the tea plant and the drying and preparation of them.

The commerce of the country from the interior to the coast ports is mainly by river and canal. The Chinese vessels called junks are very peculiar.

There are many kinds of valuable wood in China, but the bamboo is prized as one of the most useful. That which we see in our country is rarely more than an inch in diameter. But in Asia it is often eighteen inches.

Northeast of China is the Kingdom of **Korea**.

Japan. Off the eastern coast of Asia, in the Pacific Ocean, rises a range of mountains, forming a row of islands inclosing a sea, called the Japan Sea.



A CHINESE JUNK.



WOMAN OF RANK, JAPAN.

Upon these islands dwells a people belonging to the yellow race, but smaller in size and much more energetic and progressive than the natives of the mainland. They are the Japanese, and their country



JAPANESE HAIRESSER.

is known as Japan. In their language they call the country Nippon, which is the name of their largest island. Many of the islands of Japan are very small, and altogether they number several hundreds. The large island of Formosa has lately become a part of Japan.

The row of islands extends northeast and southwest, and covers so many degrees of latitude as to give it great variety of climate, though it is tem-



A TEMPLE AND GATEWAY, JAPAN.

perate in all parts, much like our Atlantic Coast States, though milder.

The surface is mainly mountainous, and the scenery is beautiful. The summits of some of the higher peaks are snow-covered.

Agriculture is the chief business of the people, though the land is not very well adapted to it. Tea and silk are important products. The Japanese are making rapid progress in manufacturing. In this respect

they excel all other people of Asia. Much of their work is exceedingly artistic. The mountains abound in coal, iron, copper, silver, and gold. Though sea-fish are largely used by the people, rice forms the most important article of food.

The Japanese are greatly devoted to education, and are far more highly civilized than the other natives of Asia. As a nation Japan is more powerful than any other not belonging to the white race.

Tokyo the leading city and Yokohama the principal seaport are united by a railroad.





NATIVE PHILIPPINE ISLANDS.

The Malay Archipelago. Look on the map and you will see, south of Asia and east of the Indian Ocean, a sea filled with islands. This is the Malay Archipelago. A number of islands are shown on the map, but there are many too small to be shown. They have long been known as the East Indies, but are more properly called the Malay Archipelago. The people who inhabit those near Asia are Malaysians, better known as the brown race. They also dwell on the Malay Peninsula and on some of

the islands in the Pacific Ocean eastward from the great group. On some of the eastern islands the black race dwells.

There is much rainfall in these islands, and as the equator passes through them, the climate is hot. The heat and moisture together produce a remarkable growth of plant life, and this leads to an abundance of animal life. Nutmegs, cloves, cinnamon, and other spices come from here, and on the larger islands, Java especially, great quantities of coffee are produced. Precious gems and metals are procured here. Many of the islands belong to the Euro-

pean nation known as the Netherlands, and are controlled, in whole or in part, by the Dutch. Among these are the large islands of Java and Sumatra.

Java is the most important of the islands. Its scenery is wonderfully beautiful. Owing to the climate there is a rich growth of



CLEANING COFFEE.

plant life, so that groves, orchards, gardens, and forests are always green. Most of the forest trees of India grow here.

The elephant, bear, rhinoceros, and tiger are found here, as on the mainland and in the other large islands. The fact that the plants and animals of these islands are similar to those of the mainland of Asia, is one reason for the belief that they were at one time joined to the mainland.

Rice is the principal crop and the staple food of the people; sugar and coffee are the chief crops for export. In the east, sago is made from the sago palm.



THE TIGER.



SCENE NEAR CAIRO.

LESSON 54.

Africa.

This Grand Division is really a vast peninsula, attached to the main continent by the Isthmus of Suez. It almost joins Asia at the entrance to the Red Sea, and Europe at that to the Mediterranean Sea. Find these straits on the map.

The coast-line is much more regular than that of the rest of the Eastern Continent, so that there are fewer harbors. It is different, too, from the rest of the continent, because there are few islands along its coast. The mountains do not extend into

the sea so as to produce peninsulas and islands, as they do in all the other grand divisions, except where an extension of the northern mountains forms the Canary Islands. Africa has much less high and



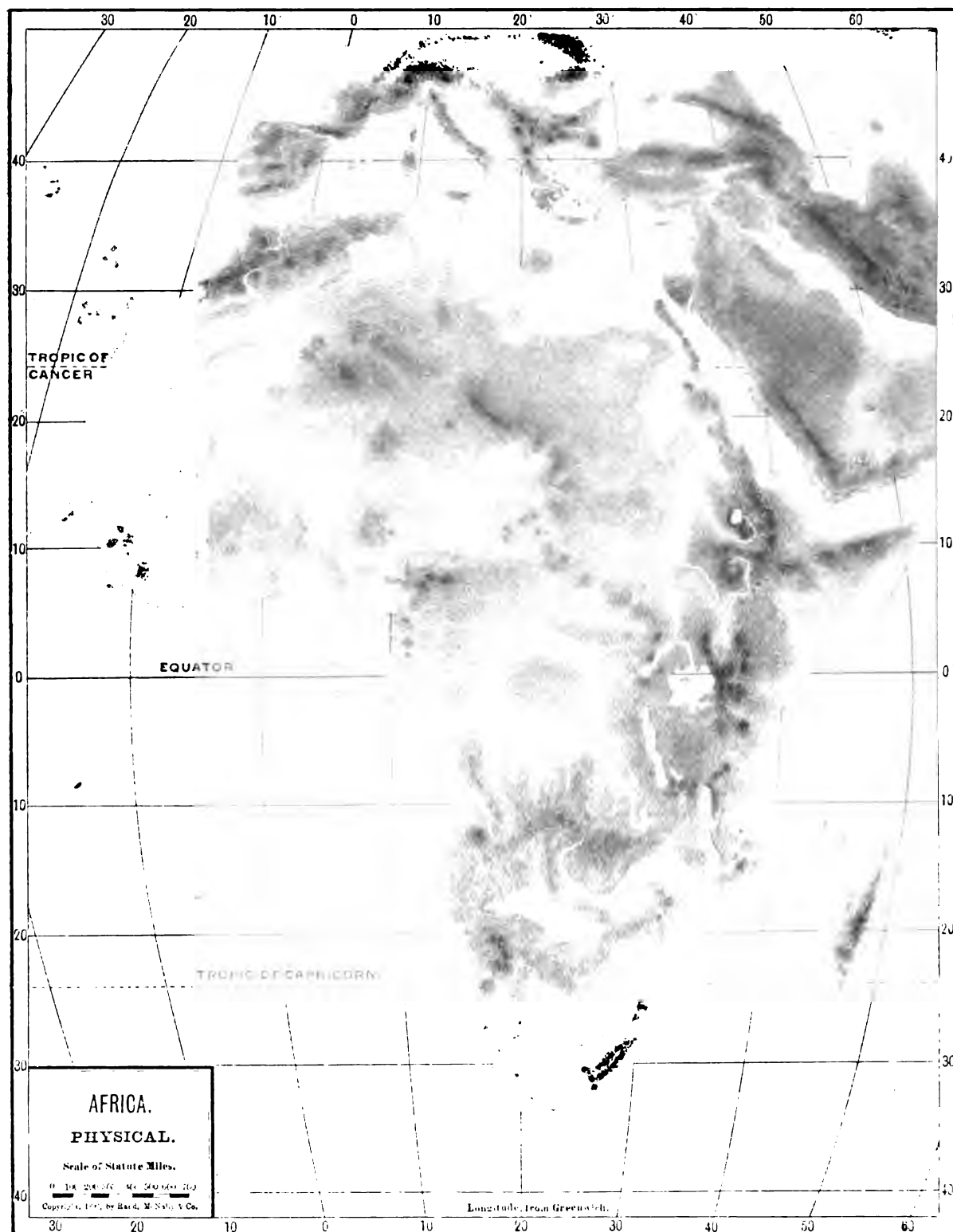
A VIEW OF THE NILE.

rocky coast than the other parts of the Eastern Continent.

A large part of Africa is highland, but most of its area is not very high. The highest is, as you see by the picture, in the southeastern part, from which the land

slopes toward the northwest.

The torrid zone crosses Africa, covering nearly all of it, so that its climate is very warm. Snow never falls in Africa, except on some of its highest mountains. Much rain falls upon the highland in the southeastern half, but in the northeastern half very little falls. Consequently nearly all the river sources and the lakes are in the southeast. From this region two great rivers, formed from many branches, flow. One flows northward to the Mediterranean, the other westward to the Atlantic. Find them in the picture, and learn their names from the map. They drain the rainy region of Africa. Within that region moisture and heat combine to produce a very



rank growth of vegetation. Dense forests abound, which are inhabited by animals in great variety.

The Basin of the Kongo is crossed by the equator, like that of the Amazon in South America, yet it is not so hot in this region, because the altitude is great. White men can retain their health in the Kongo Basin better than in that of the Amazon, on account of the altitude. The Kongo is one of the great rivers of the world.

As distance from the equator increases, the vegetation grows less, because the rainfall diminishes until at length areas are reached where it altogether ceases. These are called **deserts**. The most noted one in the world, called the Sahara, is that in the north of Africa. That in the south is smaller, and is called the Kalahari Desert.

The commerce of Northern Africa is to a large extent carried on by means of camels, which bear loads of merchandise across the desert. Generally the merchants go in companies, called **caravans**.

Between the wet region and the deserts, on either side, are great belts covered with grassy plains. The one in the north is the largest, and is called the Soudan. Most of the rainfall of the Soudan goes back into

the air, but there is one large river which flows to the ocean. Find it on the map; what is its name?

The Nile is the most famous river of Africa. Find it. After leaving its basin, it flows for hundreds of miles through the

desert, without a tributary, before it reaches the sea. Near the sea it becomes important, for here it has deposited its silt for thousands of years, thus building a fertile delta. The great valley and delta of the Nile have been man's dwelling place from the earliest times mentioned in history.

It rarely or never rains near the mouth of the Nile, and the rich soil deposited by the river would be barren for want of moisture, were it not for the yearly overflow of the river. Once a year there comes a season of heavy rains in the great highland area drained by the branches of the Nile. Find it. This water fills the channel of the river, and sweeps

along for many hundreds of miles, until it reaches the valley and delta, where it spreads for a great distance over the level surface on either side of the river. Thus the parched ground is soaked thoroughly. The soil takes in water enough at this time to support the crops until the next year's overflow shall come.





Not only does the river bring the needed moisture, but its muddy water deposits a covering of silt over the ground, which gives richness to the soil and feeds the crops that are planted.



desert, called oases, the people belong to the white race, although some Negroes are found there, as in most countries. The white race in Africa north of the Sahara are principally Arabs. Their complexion is dark, much like that of the Hindoos in Asia.

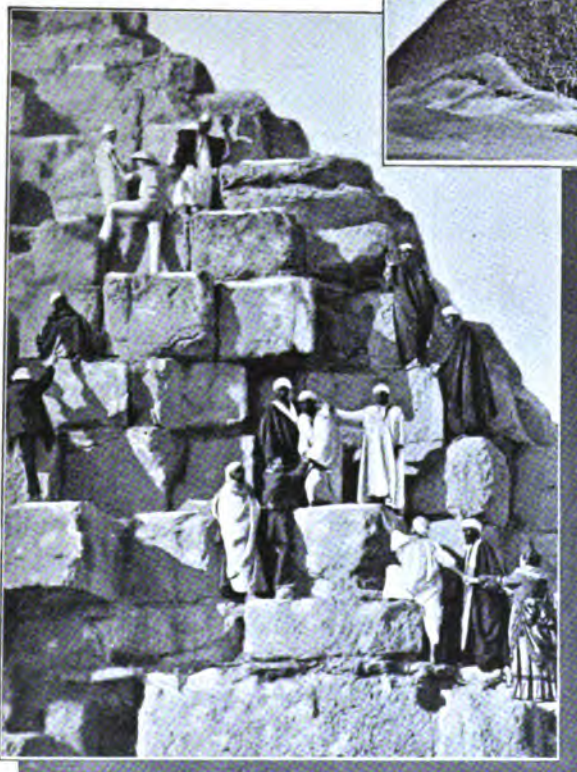
On the great island of Madagascar, the natives resemble the brown race.

The natives of Africa are generally savages, but different white nations have conquered various parts of the country and there the white race has been established. North America has passed from the control of the savages of the red race to that of civilized white men, and Africa will at no very distant time be rescued from the savages of the black race.

Africa is the home of the black race, but they are not native to all of Africa. In the highland, and along the coast in the north, and in some fertile spots in the

Egypt is a very old country. It covers a portion of the desert, but the inhabited part is the valley and delta of the Nile. Two crops are raised each year. Cotton, rice, and sugar are the leading products.

In ancient times, before



CLIMBING A PYRAMID.

the days of European civilization, Egypt was the greatest nation of the earth. The ruins of its buildings and monuments still stand, to show what a great people once lived in the Valley of the Nile.

In modern times the country is under the control of the people of other nations, mainly England, and the condition of the inhabitants has been greatly improved. The Suez Canal was dug in the north-eastern part of Egypt.



ONE OF THE GREAT PYRAMIDS.

Alexandria is the leading seaport, and Cairo the largest city.

There is a narrow strip of fertile country along the Mediterranean coast of Africa and its northern highland.

This strip is occupied by four countries—**Morocco, Algeria, Tunis, and Tripoli.**

The slope toward the Mediterranean, in those parts where rain is abundant, is well adapted to the growth of cereals, and agriculture is the leading industry. The southern slope is adapted to tropical products.

Immense numbers of trees, whose bark furnishes cork, grow upon the mountains. Gum-bearing trees also abound from which varnishes are made.



THE AFRICAN LION.

The most important tree of Africa is the date-palm. It grows north of the desert and also in the oases of the Sahara, where its fruit furnishes the principal food.

Abyssinia, which lies on the highland in the east, is a barbarous country, peopled by Arabs and Negroes. It is near the equator, but its height gives it a temperate climate, except in the valleys. The coffee plant is a native of this country.

The greater part of the



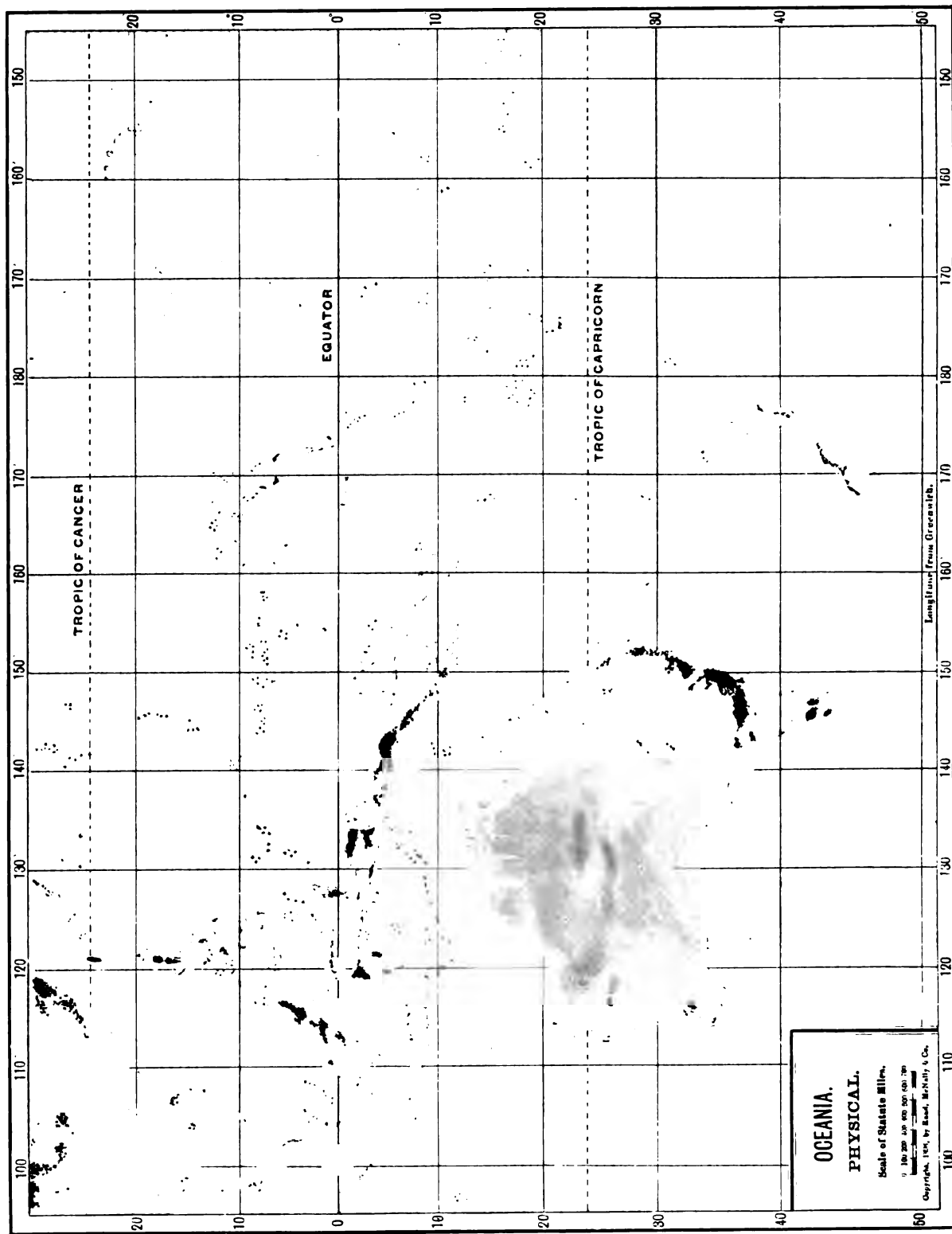
The **South African Republic** and the **Orange Free State** are peopled by descendants of the Dutch, called Boers. There are rich diamond fields and mines of coal, lead, silver, and gold.

Madagascar is inhabited by a barbarous people. It is now controlled by the French nation.

Kongo Basin opened to the world by Europeans is called the **Kongo Free State**.

Cape Colony belongs to the British nation, and many white people are there. It has rich gold mines and diamond fields. Many sheep and cattle are raised. Ostriches are native to this country. The rearing of the birds for their feathers is an important industry.





LESSON 55.

Oceania.

Each of the grand divisions which we have considered consists of a great body of land and the islands that adjoin it. The one we speak of now consists of a continent—the smallest one, **Australia**—and not only the islands that belong to it but thousands of others in the Pacific that lie far away from it.

In the map you may see a line that passes through the group of islands, separating those that belong to Asia from those which do not. All the little spots of land and all the large ones, together with Australia, south and east from where that line is drawn, form the Grand Division, which, because it lies scattered in the ocean, is called **Oceania**.

Most of the islands are so small that they would not, if all joined together, amount to a quarter as much surface as that of the Continent of Australia; so the Grand Division, though scattered over many thousands of miles of the earth's surface, is really the smallest of the six. Repeat the names of all the grand divisions in the order of their size.

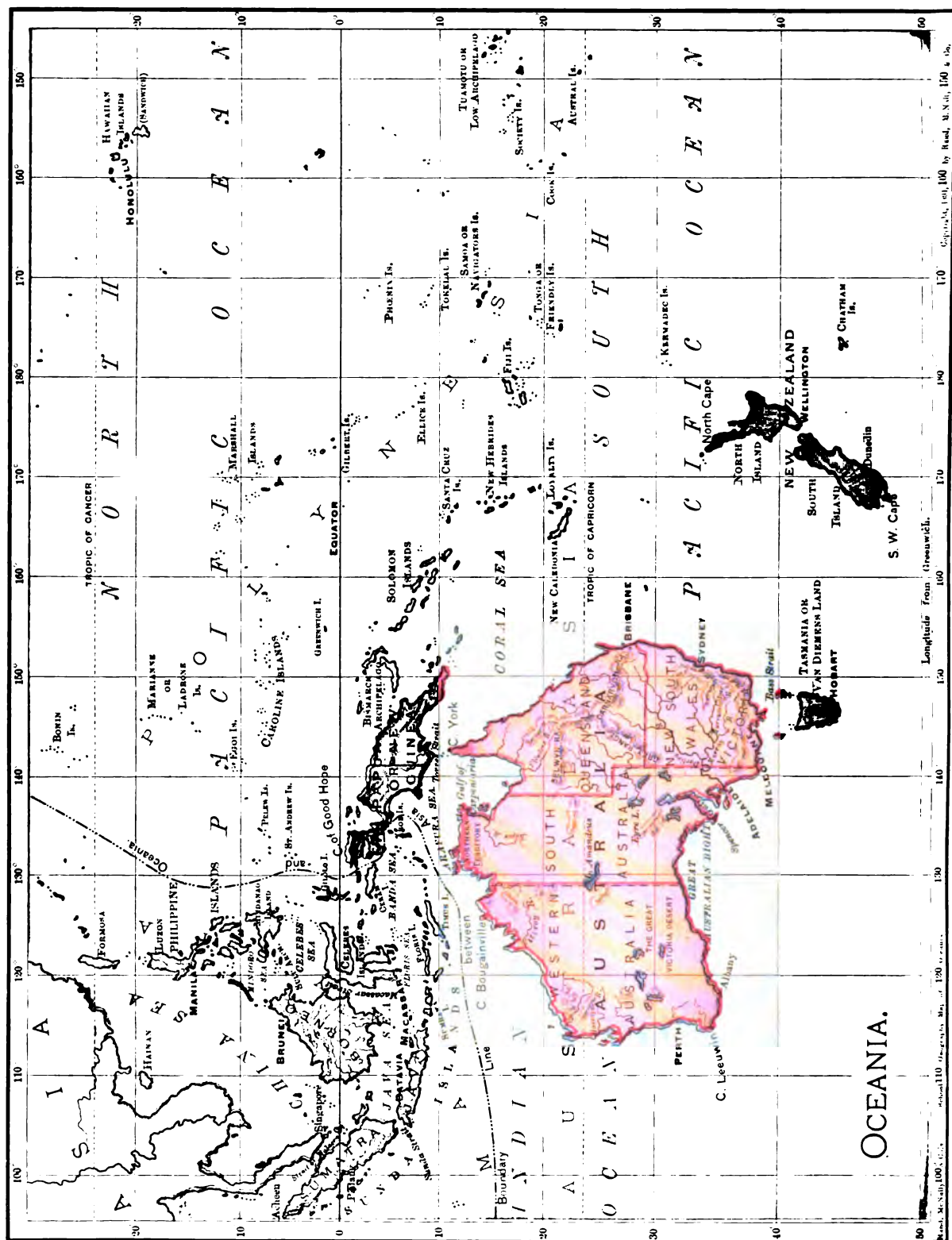
The other grand divisions are parts of continents, but in this case the continent is a part of the Grand Division.

New Guinea, which is the largest island, is the second largest in the world. It lies north of Australia, of which it was probably once a part. The strait between it and the continent contains islands which show that the mountains of the two land bodies are of one chain.



SYDNEY AND HARBOR, AUSTRALIA.

VIEW OF MT. EGMONT, NEW ZEALAND.



New Zealand is another mountain chain rising above the sea. It consists of two islands; what are they called? Are they large or small islands?

Most of the Grand Division lies south of the equator, and most of the land lies far enough south to be within the south temperate zone. New Zealand has about the same latitude south as the United States has north. The Hawaiian or Sandwich Islands form the group which lies nearest to our country. They lie in about the latitude



A NATIVE CHIEF.

of Cuba, and, like Cuba, produce good crops of sugar-cane.

There are not many wild animals, except on the large islands.

The native inhabitants of the islands of Oceania were savages, when the islands were discovered, but under the influence of missionaries and the example and control of white men, they have adopted many of the ways of civilization.

Different European nations have taken possession of most of these islands. New Zealand and many small ones belong to the English nation, and other islands to the French, German, and Spanish nations.

Australia.

This continent is about as large as the United States. Its coast-line is much like that of Africa, in having but few inlets, although most of them make excellent harbors. The coast on the east is mountainous, but in other places is low and flat. Along the northeast coast runs a great reef, several miles in length, built by the



BREAD FRUIT.

coral polyyps. Such a reef differs from a coral island in not having been built high enough, as yet, to become an island. More than half of the area consists of plateaus.



NATIVE TREE DWELLERS, NEW GUINEA.

There is one large river, and this, with its branches, drains a great basin. Find it on the map. Give its name. In what part of the continent is this river basin?

Notice by the map that short rivers seek the ocean around the entire continent, but that a great part of the interior does not drain



NATIVE AND BOOMERANG.



A KANGAROO.

to the ocean. There are numerous lakes which receive rivers, but have no outlet. Of course these are salt. The northern part is the warmest, but the climate throughout the country is warm, dry, and healthful. The seasons are like those of our own country, but different as to time. When it is winter with us, it is summer in Australia. July is the coldest month.

The vegetation is different from that of the other parts of the earth. Most of the trees are evergreen, shedding their bark

each year, instead of their leaves. Some of the ferns grow as large as trees.

The native animals are not large, and differ from those of other countries. Many animals from other parts of the earth have been brought there, so that now the native animals are disappearing, and their places are being taken by those of foreign origin.

The original inhabitants were of the black race, but they, like the animals, are fast passing away. The country may now be considered as peopled by the white race, like North America.

Australia is a part of the British Empire, and is peopled mainly by emigrants from Great Britain, and their descendants. Most of the people live in the southeastern portion of the continent. Some dwell along the coast, but few in the interior, because of its desert character. Minerals are abundant, especially gold and silver. The chief product of the country is wool, of which

more is grown here than anywhere else in the world. Great quantities of cattle are raised, and wheat is extensively grown. The commerce is principally with the home country, Great Britain. Melbourne and Sydney are the largest cities. Sydney has a fine harbor.



MAORI WOMAN, NEW ZEALAND.

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